

Wooden Furniture in Herculaneum

Wooden Furniture in Herculaneum

Form, Technique and Function

By

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FOREWORD

In 1984, whilst working in Pompeii on a research project run by the Catholic University of Nijmegen, I first visited the excavations at Herculaneum. My curiosity was immediately aroused by the large quantity of wooden furniture present at the site, and this curiosity only increased as I realized how summarily this material had been dealt with in the archaeological literature. Several years earlier a long-standing interest in furniture had led me to take a course in furniture making and design and it was the combination of archaeological curiosity and personal interest in the subject which finally led to this study.

The present book is a slightly revised version of a dissertation which was published in Dutch in 1994. Both the research and the translation were funded by the Netherlands Organisation for Scientific Research (NWO).

I would like to thank my supervisors, Jos A.K.E. de Waele and Herman A.G. Brijder, for the great interest they took in my work and for their stimulating and valuable criticism. I am also especially grateful to Willem J.Th. Peters, whose shrewd and scholarly mind initiated me into the disciplines of the archaeologist.

Thanks are also due to my colleagues at the Catholic University of Nijmegen, to the staff at the Netherlands Institute in Rome, and to the Soprintendenza Archeologica at Pompeii, all of whom helped make it possible for me to conduct my research in Italy.

Finally, this English edition could never have been accomplished without the commitment and enthusiasm of Rob Bland, the translator, and of Willian Loerts, who has supported and assisted me in this project since the very beginning.

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INTRODUCTION

In the year 79 A.D. the volcano Vesuvius erupted, suffocating the Roman city of Pompeii under a blanket of ash and *lapilli* and engulfing the small town of Herculaneum in streams of mud and lava. Once the lava had cooled it formed an impenetrable layer of volcanic material which effectively sealed off Herculaneum from the world for nearly seventeen centuries. Recent finds reveal that many of the inhabitants had just time enough to flee their homes before being overcome by hot clouds of gas and dust as they sheltered under the vaulted cliffs by the beach. Coins and gold jewelry found amidst the skeletons suggest that they had abandoned their houses in panic, clutching their most precious possessions.¹ Everything else remained in the houses. It was not until the 18th century that some of this material began to come to light, and more has been recovered in a series of excavations right up to the present day. The effect of this unexpected catastrophe has been to hand us a snapshot in time, a Roman town frozen on a single day nearly two thousand years ago.

Under some twenty metres of hardened lava (the result of this and later eruptions) a lot of organic material has been preserved in a carbonized state.² This can be divided into various categories. The most important is wood, which was used in a variety of ways. Much of it comes from buildings: floors, doors, windows, balconies, staircases and timber-framing. There is also a capsized wooden boat, which was only discovered in 1982, and all sorts of wooden objects, such as sculpture, a windlass, a textile press and a wide range of furniture.³ Other household material has been also been found in large quantities, including the remains of bedding, clothing, leather money pouches and footwear. Food remains were extensive and included breads and bones, fruit, grains and vegetables.

Since the beginning of the regular excavations (1738) all sorts of objects made of organic material have been dug up, but only a very small proportion have survived to the present. Until the start of the 'nuovi scavi' led by Amedeo Maiuri, which began in 1927 and slowly uncovered most of the town as we now know it, there was no proven method of preserving wood. The organic material which has survived (nearly all of which was found in this century) now stands in the excavated town itself and in the site's various storerooms. One important category amongst this material is formed by wooden furniture (fig. 1).

Some forty wooden pieces of furniture are either wholly or partly preserved in Herculaneum. The nature and scale of this group makes it a unique resource, which fills a large gap in our knowledge of ordinary Roman furniture. In terms of sheer numbers this furniture has no rival. In Egypt and in the Crimea, the most important sites after Herculaneum, there are far fewer examples left from this period. Furthermore, the exceptional value of the Herculaneum furniture lies in its great diversity of form. Elsewhere we encounter mainly round three-legged tables, but in Herculaneum we find not only tables, but also beds, seating, cupboards and chests. The wood on the surface of these pieces is always carbonized, but the core is often well preserved. After discovery most were mounted on wooden or metal frames and the wood was treated with paraffin-wax as a preservative. Recently some of the pieces have been cleaned and remounted on plexiglass.

The wooden furniture from Herculaneum has been neglected in the archaeological literature. It is almost as if it had been completely forgotten, even though there were pieces on display at the

¹ For the finding of these skeletons see Gore 1984, especially 556-561; Deiss 1985, 21; Maggi 1985, 30; Budetta 1993, 677-679.

² Of the eruptions since 79 A.D., that of 1631 was especially severe.

³ Most of the categories of wooden finds were named and briefly described by Maiuri 1958, *passim*; doors: cf. Adam 1984, 321 figs. 674 and 676, 329 figs. 693-694; staircases: cf. Mielke 1977; Adam 1984, 220-221 and figs. 478-481; sculpture: cf. Maiuri 1960, 400 fig. 489; boat: cf. Cerulli Irelli 1983, 416; id. 1984, 518 and tav. LXXIX, 2; Pappalardo 1983, 346-349 and fig. 26; Gore 1984, 602-604; Deiss 1985, 20; Maggi 1985, 55-65 and 86-89; Conticello 1986, 515; Pappalardo 1987, 192 tav. 79; Budetta 1987, 198 and tav. 89; id. 1988, 237; Ferroni/Meucci 1989; Budetta 1993, 679-680.

excavations from as early as 1927. This long neglect can probably be ascribed to a general lack of interest in wooden objects from antiquity. J.M. Coles (1982, 1) takes the profession to task on the matter: 'The value of ancient wooden remains is not often recognized by archaeologists, partly because of the opinions that little has survived and that even less can be gained by its study. Both views are incorrect. The retrieval and examination of ancient woodworking can provide new insights into the working of communities at both artificial and environmental levels, and may also help in efforts to gain insight into the structure of early societies.'⁴ The problem is exemplified by the standard work on the subject, G.M.A. Richter's 'The Furniture of the Greeks, Etruscans and Romans' (1966), from which the Herculaneum furniture is almost wholly omitted. Richter herself admits that most Roman furniture was made of wood, yet bases her account of it on show pieces made of more expensive materials. In fact there was a general tendency in earlier research into Roman furniture to focus on luxurious furniture in stone or metal. This is hardly surprising since most of the surviving pieces are made of these less transient materials. Yet our picture of the interior of a Roman house is completely distorted if it is based on such pieces, because the majority of Roman furniture was in fact made of wood.

Even publications on Herculaneum itself give the furniture scant attention. M. Ruggiero (1885), A. Maiuri (1958) and M.G. Cerulli Irelli (1974) mention only a few examples. This is largely because the most important excavator, Maiuri, intended right up to his death in 1963 to publish the furniture himself. By that time the novelty of discovery had passed and the material remained lying uncatalogued and unprocessed. If the wooden furniture of Herculaneum is mentioned at all, one is generally referred to Maiuri's published account of the excavations, 'Ercolano, I Nuovi Scavi (1927-1958) I' (1958), in which a number of pieces are summarily dealt with. Now, forty years on, the state of the furniture, which in most cases still stands in the excavation itself, gives grave cause for concern. Air pollution and constant touching by the public are gradually taking their toll and it is therefore all the more urgent that the material receives the attention it deserves.

This study is linked to research which has been going on in Herculaneum since 1985, conducted by members of the Classical Archaeology Department of the Catholic University of Nijmegen, under the direction of Prof. Dr. J.A.K.E. de Waele (and under the auspices of the Soprintendenza Archeologica di Pompei). Work from this programme has so far been published by M.C. van Binnebeke (1991 and 1993), G. Jansen (1991) and R. de Kind (1992, 1993 and 1998). One important aspect of the research is a functional analysis to deduce the purpose served by the various rooms in the houses. The way in which the rooms were used in daily life (for example, for eating, sleeping and working) can reveal the role of the house as a whole and the social status of its inhabitants. The functional analysis includes the formal aspects of the room (such as size, wall and floor decoration, window and door openings) and the location of the room within the house, taking the objects present into account wherever possible. A thorough study of the furniture thus complements the data provided by the functional analysis very well. Their specific form and function can indicate how the room was being used at the time of the eruption, and their quality can provide clues to the social status of the occupants.

This study publishes the wooden furniture in Herculaneum in its entirety for the first time. The five chapters of the main text discuss various aspects of the subject. Chapter 1 outlines the general framework within which research on the wooden furniture has taken place. The term 'furniture' is defined for the purposes of the study, followed by the categories into which the general term is divided (§ 1.1). Wood as a category of archaeological find is then discussed and we examine the circumstances which are most favourable for the preservation of wood in an archaeological context (§ 1.2). Next comes a critical assessment of the most important publications on furniture in

⁴ Cf. Sliwa 1975, 5.

antiquity (§ 1.3). We first look at the preceding periods - Egypt, the Near East and Greece, the Apennine peninsula before the Roman period - then at northern and central Europe and finally at the Roman period itself. Section 1.4 reports how the wooden furniture from Herculaneum has so far fared in the archaeological literature. After that we examine the aims of research into this furniture and the lines of enquiry to be pursued (§ 1.5). We then look at the sources for our knowledge of Roman furniture (§ 1.6) and at the geographical and chronological parameters of the subject (§ 1.7). The chapter ends with a digression on the influence of furniture from Herculaneum and Pompeii on neo-classicism (§ 1.8).

Chapter 2 discusses the way the wood in Herculaneum has come to be carbonized (§ 2.2) and then deals with the various complications which have led, in spite of apparently favourable circumstances, to so many pieces of wooden furniture being lost (§ 2.3). We go on to examine the history of the excavations and the value placed upon the furniture during the modern period (§ 2.4). The find spots of the individual pieces are then dealt with (§ 2.5), followed by a discussion of how the furniture has been preserved, reconstructed and added to in the 20th century (§ 2.6). In § 2.7 we look at the present location and state of preservation of the furniture, and finally in § 2.8 we ask how far the pieces which have survived are representative of the furniture which stood in the houses of Herculaneum before the eruption.

Chapter 3 explores the different forms of furniture which are preserved in Herculaneum: beds (§ 3.2), tables (§ 3.3), seating (§ 3.4) and storage furniture (§ 3.5). The main question here is whether the Herculaneum material is unique or whether similar examples are found with any frequency elsewhere. At first sight the forms of the Herculaneum pieces seem to occupy a unique position in the original material which has come down to us from the Roman period. However, as we will attempt to make clear, this is more a question of pure chance, of the unique circumstances which ensured the survival of so much wood, than anything exceptional about the Herculaneum furniture itself. After this, the library of the Villa dei Papiri is discussed (§ 3.6) and the chapter ends with an examination of the formal similarities between the various types of furniture found in Herculaneum (§ 3.7).

Chapter 4 explains what the furniture in Herculaneum (in combination with other sources) can tell us about the materials and techniques used by the Romans in making furniture. After looking at the materials and techniques used in the main Mediterranean cultures preceding the Roman period (§ 4.2), we deal with the written sources upon which our knowledge of Roman carpentry has so far been based (§ 4.3). We then examine the types of wood used for furniture (§ 4.4) and compare the impression given by antique texts with an analysis of wood samples taken from the Herculaneum furniture. There follows a survey of tools used by Roman cabinetmakers (including those from Herculaneum) based on tool finds and on the observations of Roman writers (§ 4.5), and we then turn to the techniques they employed (§ 4.6). The Herculaneum furniture is in fact our most important source for the woodwork joints and finishing methods used in Roman furniture. Fittings in materials other than wood are then discussed (§ 4.7), a reconstruction of the working process followed by the Herculaneum cabinetmakers is given (§ 4.8) and the chapter closes with a look at the organisation of the trade (§ 4.9).

Chapter 5 deals with the function of the Herculaneum furniture. After a general discussion of Roman households (§ 5.2) and the arrangement of the Roman house (§ 5.3), we look at the specific situation of the houses in Herculaneum (§ 5.4). In these three sections we present the theoretical basis for a study of the Herculaneum furniture in its original setting. We then explore what a combination of the furniture and its find context can tell us about the use of the individual pieces and of the rooms in which they were found (§§ 5.5-5.7).

The main text is followed by a descriptive catalogue, which contains an inventory of all the surviving pieces from Herculaneum. These are grouped according to form and are described according to a standard model. Beds, tables, seating and storage furniture are presented in order. Drawings and photographs have been made which document the current condition of all the pieces

and, in some cases, reconstruct their original situation.

Appendix 1 presents the archive material and publications (1740-1982) which have a bearing on wooden furniture found during the excavations. This covers both the preserved pieces and those which have been lost through decay. Wooden fragments which were possibly parts of furniture are presented in Appendix 2, while the casts of wooden furniture made in Pompeii (very important material for comparison, especially of techniques) are given in Appendix 3.⁵

⁵ In this study the Greek and Latin terms and quotations are given in italics, as are the modern names for varieties of wood which are partly taken from the Latin. Sizes are generally given in metric measurements, but occasionally in the Roman foot (') of around 29.4 cm.. Antique authors and works are referred to using abbreviations taken from the Oxford Latin Dictionary (P.W.G. Glare [ed.], Oxford 1968-1986, IX-XX).

CHAPTER 1

GENERAL FRAMEWORK

1.1 Definition

The term commonly used in the Latin sources to denote all household effects, including furniture, is *sup(p)ellex*.⁶ The most important text in this respect is the *Digesta* 33.10, which lists the various sorts of *sup(p)ellex*, generally labelling them as *res moventes non animales* (lifeless movables; *Digesta* 33.10.2). Amongst the items ascribed to this category are furniture, bedding, crockery and lamps, irrespective of the material from which these objects are made.

In this study we use the term 'furniture' in the prevailing modern sense: 'movable articles, whether useful or ornamental, in a dwelling-house, place of business, or public building'.⁷ The other items covered by the term *sup(p)ellex* in the Latin sources therefore fall outside its scope. We shall however include wall cupboards in our understanding of furniture. As today, cupboards in the form of niches with wooden shelves could be built into the structure of the house.⁸ Sometimes such a niche was closed off with a door. Racks, which were usually anchored to the wall against which they stood, are also included in this category. In her study of medieval furniture, P. Eames (1977, 2) is little concerned with whether a piece of furniture is fixed or movable, because she observes little difference in form, function, style or date in the material involved. This holds true for the Roman period. Recesses in the wall often imply the presence of wall cupboards in Roman homes. However, in order to prevent confusion with niches possessing other functions, this study will only regard them as furniture when further clues are available; for example, when remains of a cupboard shelf or doors are documented. Loose shelves attached to the wall to carry household articles or food are not here given the status of furniture.

Nowadays furniture is broadly classified in three different ways. Firstly, it can be divided according to its outward form: seating, beds, tables, cupboards and chests. These categories are in turn divided into sub-categories; thus the stool, the bench, the chair with a backrest, with or without armrests, all belong under the term 'seating'. Similarly, cupboards are usually seen as open or closed, the first group usually being described as racks. A similar division into main and sub-categories can also be made for Roman furniture. As we shall see, many 'modern' sub-categories already existed in antiquity.⁹ However, to the range of furniture defined above one type must be added for the Roman period; the *aedicula* (household shrine), which at that time could take the form of a free standing cupboard.

An alternative to categorization on the basis of form is one based on function. A. Feulner defines two groups, which he describes as 'Träger und Behälter': that is to say, pieces which carry people or objects and pieces which contain objects.¹⁰ Here we have preferred a wider spread of

⁶ Apul., Met. 1.23; Cato, Agr. 98.2; Cic., Agr. 2.32; id. 2.38; Cic., Phil. 2.66; Cic., Ver. 2.2.83; id. 2.2.176; id. 2.4.37; CIL VI 9049; CIL VI 31033; Dig. 33.10; Hor., S. 1.6.117-118; Hor., Ep. 1.5.4-7; Iuv. 3.13-14; id. 11.99; Liv. 30.17.13; id. 39.6.7; Luc. 10.122; Mart. 5.62.3; Nep., Att. 13.5; Pers. 4.51-52; Pl., Per. 731-732; Pl., St. 61-62; Plin., Nat. 15.34; id. 37.17; Prop. 4.8.37-38; Sen., Ep. 87.6; id. 101.12; Sen., Consolatio ad Helviam 11.3; Suet., Aug. 73; Ter., Ph. 665-666; Varro., L. 8.32; id. 9.46; Verg., G. 1.165-166. Occasionally the word *instrumentum* is used as a synonym, cf. Dig. (Pomponius) 33.10.1: *Supellex est domesticum patris familiae instrumentum*. (*supellex* are the household goods of the *pater familias*.)

⁷ The Oxford English Dictionary, Second Edition, 1989. Many modern languages use terms for furniture which are derived from the Latin word *mobilis* (movable), e.g. 'Möbel' in German, 'meubel' in Dutch, 'meuble' in French. In the Latin written sources, the word '*mobile*' appears only rarely as a noun and nowhere in specific reference to furniture. Cf. *Codex Iustinianus* 9.33.1; Dig 32.79.1; id. 50.16.93; Gaius, Inst. 4.16.

⁸ Cf. Eames 1977, XI and 1 who suggests the same approach for medieval furniture.

⁹ Cf. Feulner 1930, 11; 1980, 13.

¹⁰ Feulner 1930, 12; id. 1980, 14; cf. Grodde 1989, 19.

‘functional categories’ and have divided furniture according to the activities for which it was used, such as eating, sleeping, resting and working. A further distinction can be made here between furniture for daily use and show pieces.¹¹ To the first group belong most of the items found in the appointment of shops, workshops and the service rooms in private houses. The second group includes items found mainly in the reception rooms of private houses and in public buildings. In private houses there are infinite gradations possible between the simplest everyday furniture and its more decorative forms. Division into functional categories can illuminate hierarchies within certain forms of furniture in antiquity, as for example in seating; an important person or a god was represented on a chair with back- and armrests; a less important person had to make do with a chair with backrest alone; low status was denoted by a simple bench or stool without further support.¹² However, an exception to this rule are stools of honour or office (respectively *bisellia* and *sellae curules*) which endowed the occupant with great prestige.

A specific problem is presented by beds and couches. There is no difference in form (or construction) between pieces used for sleeping and pieces upon which Romans reclined to eat. The distinction between them is purely one of function and can be determined only by the context of the find (i.e. was the piece found in a dining room or a bedroom?). While some scholars have used the word ‘couch’ for all such pieces, we have here chosen to emphasize the functional distinction by referring to bedroom pieces as ‘beds’ and dining room pieces as ‘couches’. In cases where the precise function is unclear, unknown or unimportant we use the word ‘bed’, since it is probable that households contained more sleeping than dining furniture. In this study, therefore, ‘couches’ (although possibly slept on) are always primarily dining room furniture.

A third categorization can be made on the basis of material. The most important material for furniture in the Roman period was wood, just like today. Stone, chiefly marble, and metal (bronze and iron) was much less common, although the number of such pieces which survive gives quite the opposite impression. This study is restricted to wooden furniture. Other materials do appear regularly, but only when they are used in furniture which is largely wooden. There are occasional references to pieces made entirely from materials other than wood, but here there are clear formal, technical or functional parallels with wooden examples. It must be emphasized that our intention has never been to draw all the wooden furniture from the Roman period into this study. The starting point is always the material from Herculaneum.

1.2 Wood as a category of archaeological find

For a long time wood, as a category of archaeological find, did not receive the attention it deserved. There are various reasons for this. Often they are associated with excavations conducted a long time ago using methods we would consider inadequate. Yet whatever the shortcomings of our predecessors, it has to be conceded that until this century there was no method available for preserving wood after discovery. It therefore decayed on contact with oxygen. Thus C.L. Ransom (1902, 137-140) knew of only six pieces of wooden furniture from classical antiquity. Since that time, archaeologists’ interest in wood has increased and ways to preserve it have been found. The fact that wood has survived at all is usually due to a total or partial exclusion of oxygen. The formation of fungus is thus prevented or impeded and the process of disintegration forestalled.¹³ A further factor is the presence or absence of certain acids and micro-organisms. The most

¹¹ Cf. Feulner 1930, 8 and 1980, 12-13. Feulner formulates this as follows: ‘Der Gegensatz oder das Zusammenspiel von Zweckform und Kunstform bildet den eigentlichen Inhalt einer Kunstgeschichte des Möbels.’ Grodde (1989, 10) distinguishes ‘Nutzmöbiliar’ or ‘Zweckmöbiliar’ from ‘Repräsentationsmöbiliar’.

¹² Cf. Feulner 1930, 12-13; 1980, 14-15.

¹³ Cf. Gorczynski 1969, 153.

common circumstances which have fostered the survival of wood are as follows:

- the wood has lain continuously in water or wet clay; the presence of particular acids can further encourage this form of preservation;¹⁴ an example of this is the archaic wooden furniture found on the Greek island of Samos;¹⁵
- the wood has been situated in extremely dry surroundings; organisms which would normally cause the disintegration of the wood cannot survive without moisture. Good examples are furniture from Egypt, Gordion and Kertch (Pantikapaion) in the Crimea,¹⁶ and possibly the wooden furniture from the early Bronze Age found in Jericho by J.M. Kenyon in 1952;¹⁷
- the wood has been frozen in permafrost. For example, two round tables with four legs in the form of lions are amongst finds made in the ice of the the Altai mountains in Russia. They would have belonged to the Pazyryk nomads;¹⁸
- the wood has lain close to corroded metals or in a saline environment;¹⁹
- the wood has been carbonized by fire, which has preserved it in altered form; here the supply of oxygen must have been limited during the process of carbonization, otherwise the wood would have been totally consumed; carbonized wood is chemically stable and attacked by very few organisms.²⁰

The wood in Herculaneum belongs to the last category, since it has lain in a carbonized condition and in a seam which was almost impenetrable to oxygen (see § 2.2).

In the case of houses covered by volcanic material, plaster casts can sometimes be made of cavities left by the decayed wood in a hardened volcanic mass, even though the original material has not survived. This sort of cast has been made of furniture from the Greek Bronze Age found on Thera and, more significant here, of Roman furniture in and around Pompeii.²¹

1.3 Research into furniture from antiquity

For a better understanding of Roman wooden furniture, let us first review the literature on ancient furniture as a whole. It will become apparent in Chapter 3, when the Herculaneum material is described, that these pieces did not exist in the cultural vacuum. Frequently we can observe a reliance on pieces or forms from other cultures. The most obvious examples are those from Greece (especially the Hellenistic period) and from Etruria. This reliance is expressed both in details and in general terms. But the Romans seem to have taken over formal and decorative elements from even further afield, and to have borrowed either directly or indirectly from Egypt and to a lesser extent from the Near East and the Minoan-Mycenaean culture. In the following survey the emphasis lies on the form, decoration and function of the furniture, rather than on the techniques involved. These are dealt with in Chapter 4.

¹⁴ Cf. Capelle 1980, 412.

¹⁵ See, for example, Ohly 1953, *passim*.

¹⁶ For Egypt, see (amongst others) Western 1963, 150; For the Crimea, see Vulina/Wasowicz 1974, *passim*.

¹⁷ Baker (1966, 217) ascribes the preservation of the furniture in Jericho to: 'an accumulation of gas, due to unknown causes, that killed the organisms causing decay.'

¹⁸ Cf. Dimbleby 1967, 98 and Rudenko 1948, 20-23 and *tav.* VIII and IX.

¹⁹ For this, see Taylor 1981, 7.

²⁰ Capelle 1980, 412-413 gives a fuller description of all these possibilities. Cf. also Western 1963, 150-151; Taylor 1981; Schweingruber 1983, 395-396; Grodde 1989, 4-5.

²¹ Thera: see amongst others Marinatos 1971, 41-42; Kobek 1983, 192 fig. 36 pl. 102-103; Jahn 1990, 59-60, 96-97 and *Anm.* 431-432, 260 *Kat.* 31 and *Anm.* 715; Pompeii: see appendix 3 to the present study.

Egypt and the Near East

H. Baker (1966) examines the furniture of Egypt, the Near East and the Aegean area up to the beginning of the 5th century B.C. The basic forms of Egyptian furniture were defined during the Old Kingdom, and Baker (1966, 39) detects little further development until new trends begin to appear in the 18th dynasty (1966, 60). He devotes a large part of his study to the furniture from the 18th dynasty, giving the inventories of the tombs of Tutankhamen (c 50 pieces: Baker 1966, 75-110) and of the architect Kha (32 pieces: Baker 1966, 110-124). It is quite possible, however, that the sheer number of original pieces which have survived from this dynasty might tempt us into forgetting that developments began much earlier and progressed only gradually. Other writers have made general studies of Egyptian furniture forms. E. Leospo (1987) focusses primarily on the collections in the Museo Egizio in Turin. Other work on the subject has been done by A. Koeppen and C. Breuer (1904, 47-83), C. Aldred (1954) and G. Killen (1980 and 1994). K. Kühlmann (1977) has made a thorough study of Egyptian thrones, in which he examines the development of form as well as the terminology and symbolism involved. F. Fetten (1985) writes about Egyptian chairs, which he suggests should primarily be seen as status symbols. A yet more expansive treatment of the subject is provided by M. Metzger (1985), who expounds on throne forms in Egypt, Mesopotamia, Syria and Palestine. Several papers in a recently published collection deal with furniture from western Asia (Herrmann 1996).

The archaeological and written sources for Mesopotamian furniture are examined by A. Salonen (1963), who first presents a typology, then deals in turn with materials, dimensions and techniques.

All sorts of wooden furniture has been found in tumulus MM in Gordion. This has been dated to the 8th and 7th centuries B.C. and is discussed in a monograph by E. Simpson (1985). Amongst the finds are a so-called pagoda table and eight three-legged tables with rectangular tops.²²

Phoenician furniture is dealt with in a monograph by E. Gubel (1987), who has drawn up a typology based on depictions. Chronologically this material covers the period between 1200 and 332 B.C.. Gubel (1987, 276) demonstrates a substantial Egyptian influence and regards the Phoenician area as an important intermediary in the transmission of a specific type of throne, the so-called sphinx and lion throne, to the Graeco-Roman world (Gubel 1987, 35-75 cat. 1-31). A thorough study of ancient thrones and beds from the Near East comes from H. Kyrieleis (1969, 6-97), while A. Feulner, in his 'Kunstgeschichte des Möbels' opts for an integrated survey of furniture from Egypt and Classical antiquity.²³

Greek and Roman antiquity

The standard work on furniture from Classical antiquity is by G.M.A. Richter (1966), who examines typology, chronological development and the influence of other cultural areas. This important book is a revised version of an earlier work published in 1926. The difference between the two is that the later version contains a new chapter on Aegean furniture (Richter 1966, 5-12), additions to the sections on Etruscan and Roman furniture and an updated section on Greek furniture. Unfortunately the later edition omits the appendix with technical drawings which had been included in 1926. Richter (1926, VIII and 1966, 3) regards Greek furniture as consisting of a limited number of types which were then subject to constant development and improvement. She observes many variations in detail, however, and particularly admires the simplicity and proportions of the furniture forms, which in her view radiate dignity. Her work is partially based on that of A. Koeppen and C. Breuer (1904, 114-216), who also explored Greek, Etruscan and Roman forms.

We find another typology, this time applying to both Greek and Roman wooden furniture, in

²² Cf. also Young 1958, 150; Baker 1966, 231; Aynug 1988, 357-367; De Vries 1990, 389 figs. 23 and 24.

²³ Feulner 1930, 11-34 and 1980, 13-26.

A. Wasowicz (1966, 175-202). C.L. Ransom discusses the history of the form and technique in Greek, Roman and Etruscan beds and couches.²⁴ G. Reincke (1935, 497-508) and K. Stemmer (1985, 229-239) provide overviews of antiquity as a whole, while C. Ehrl (1990) deals superficially with furniture from classical antiquity. C. Aldred (1957, 221-245) focusses on technique in his survey of Greek and Roman furniture. Chairs, beds and couches (and the sitting and lying which went on on them in the Graeco-Roman world) are discussed by T. Klauser (1971, 2-12) in a study of the stone seats (*cathedrae*) found in early Christian tombs in the city of Rome.

Appliqués for Greek and Roman couches are thoroughly explored by C. Boube-Piccot (1975) and S. Faust (1989 and 1992). Finally B. Barr-Sharrar (1987) traces the development of the anthropomorphic busts which were mounted as appliqués on Hellenistic and Roman couches and chests.

These scholars are all dealing with the whole of classical antiquity. For more specific studies, see below.

The Greek Bronze and Iron Ages, up to the end of the geometric period.

Because extremely few depictions of beds and tables from the Minoan and Mycenaean period have survived, Reincke (1935, 498) mistakenly concludes that these types of furniture played virtually no role in these cultures. General surveys of Aegean furniture by G. Kulczycki (1930-1931 and 1933), H. Baker (1966, 235-255) and P. Kobek (1983, 180-194) reveal quite the opposite. Several authors have investigated the furniture mentioned on the Linear-B tablets from Pylos.²⁵ A. Wasowicz (1964) looks at woodworking in the Minoan-Mycenaean period.

B. Jahn (1990) traces the appearance and development of seating in the Greek Bronze Age. Her monograph is based on depictions, especially sculptures, and in her view the Cycladic style of furniture stood on its own, with little formal or technical influence from outside (Jahn 1990, 54-55). This style had a major influence on Minoan furniture, although there adapted to the needs of the time (Jahn 1990, 83-86). According to Jahn (1990, 90) another original style, based mainly on Minoan examples, developed in the Mycenaean world. This is significantly different from the Egyptian style of furniture, in that the character of the wood was more important and the forms more natural. Jahn does not restrict herself to the Bronze Age, but includes seating right up to the beginning of the Archaic period (Jahn 1990, 158-182). She sees a continuity in seating forms running through from the Greek Bronze Age to the Archaic period.²⁶ She hereby takes issue with a number of earlier writers who assumed a completely new beginning after the Minoan-Mycenaean period²⁷ and aligns herself instead with S. Laser (1968) and G. Kulczycki (1933, 94), who see a late-Aegean influence on Greek forms not only in seating but in furniture generally.

S. Laser's (1968) study of prehistoric Greek furniture forms one volume of the *Archaeologica Homerica*. In accordance with the series' general pattern, he first attempts to identify the terminology for furniture in Homer and then presents a review of the archaeological material. His conclusion (Laser 1968, 77-78) is that Homer is usually describing the ordinary furniture of his own time. The more expensive furniture in this period must have been produced under the influence of forms from elsewhere, especially Phoenicia, which possibly arrived in Greece and Asia-Minor via Cyprus; in Homer such pieces are the exception. Actual examples are three wooden thrones with ivory appliqués from Cyprus, dating from the end of the 8th century B.C., which were published by V. Karagheorgis (1968, 99-103). Their clear Eastern influence suggests that Cyprus played a key role in the transmission of eastern elements into the design and decoration of

²⁴ Ransom 1905, 19-38: the history of form; Ransom 1905, 39-61: technique.

²⁵ Ventris 1955, 109-124; Higgins 1956, 39-41; Milani 1972, 37-41; Manessy-Guitton/Weil 1976.

²⁶ Jahn 1990, 200: 'Die Sitzmöbel der geometrischen Zeit bilden die Basis für den folgenden griechischen Möbelbau. Es ist jedoch kein vollständiger Neubeginn. Bronzezeitliche Traditionen werden weitergeführt und mit neuen Elementen und Techniken verbunden. Lediglich die spezifische Formgestaltung der mykenischen und minoischen Kunst geht verloren.'

²⁷ Examples of such views are: Baker 1966, 235 and 254 and Richter 1966, 11. Cf. also Jahn 1990 Anm. 1538.

Greek furniture.

Greece from the Archaic Period to Hellenism

Scholarly opinion is agreed that the number of furniture types remained more or less the same throughout the Greek period, but that many variations were possible.²⁸ In Reincke's (1935, 499) opinion, the importance of dining couches grew gradually with the custom of reclining to eat. In general we can assume that Greek houses contained only the functional furniture required,²⁹ which is not to deny that this could be richly adapted. It was not until the start of the Hellenistic period, under eastern influence, that ornate furniture began to be produced, some of it with a purely decorative function.³⁰ Reincke's coverage (1935, 502-508) of furniture forms is presented in an integrated manner so as to clarify the general development of Greek furniture style. Richter (1966, 13-84), by contrast, gives a separate description of each form.

H. Kyrieleis (1969, 98-201) deals at length with thrones and beds from the 8th to the 4th century B.C., placing the emphasis mainly on the legs of these pieces. In a recent article, J. Boardman (1990, 122-131) examines couches used in Greek *symposia* and the eastern origin of the use of couches for feasting. According to him, it is not possible to make a distinction between the couches used for *symposia* and beds upon which people slept. Apparently he was not aware of J.M. Dentzer's work (1982), which is a sizeable monograph on the motif of horizontal eating in Greek depictions. Greek chests and other furniture in chest form are discussed by E. Brümmer (1985). According to her, these constructions changed very little over the centuries, being largely determined by the material (wood) from which they made.

Apart from studies of Greek furniture in general, a number of monographs focus on separate periods. These are listed below.

The Archaic period

Important finds of wooden furniture from the Archaic period have been made on Samos; their secrets are unlocked in various publications of which the most extensive is that by D. Ohly (1953).³¹ H.U. Cain (1989, 87-95) looks at one specific type of throne which first appeared in the Archaic period and was then depicted as the seat of gods for a further eight centuries. These thrones had back and arm rests, but are chiefly characterized by their rectangular legs, the sides of which were hollowed out in the middle, with volutes above. They are used as a *topos* or stock motif, to emphasize the dignity of whoever is depicted sitting on them.

The Classical period

Reincke (1935, 504) characterizes classical Greek furniture as simple in form and without much ornament. The Greek house must have been relatively empty in this period, containing only the furniture which was really necessary.³² In his article on the terminology for furniture used on the Attic *stèlai* listing the possessions of Alcibiades and his cronies (which were confiscated in 415 B.C.), W.K. Pritchett (1956, 210-254) concludes that furniture with costly ornamentation was not intended for private use in the classical Greek period, not even amongst the rich. He sees the remarkably low sums which the furniture seems to have fetched as a reflection of the modest demand for furniture at the time. Reconstructions of furniture based on depictions on vases are published by T.H. Robsjohn-Gibbings and C.W. Pullin (1963). Several of these reconstructions currently form part of the Goulandris Collection in Athens.

²⁸ Cf. Richter 1926, VIII; Feulner 1930, 21; 1980, 20; Richter 1966, 13. Baker (1966, 256 and 285) thinks that the basic forms of Greek furniture were established in the 6th century B.C. and were thereafter perfected.

²⁹ Cf. Reincke 1935, 500.

³⁰ Cf. Reincke 1935, 500-501.

³¹ See also Homann-Wedeking/Jantzen/Kopcke 1966; Kopcke 1967; Walter 1976, 29-30; Kyrieleis 1980 and 1983, 295-302.

³² Richter 1926, 1; 1966, 3.

The Hellenistic period

Hellenistic furniture is chiefly characterized by an increase in ornamentation and radiates an almost baroque charm.³³ Decoration and display are more important than the beauty of the material or the functional form. The most important work on furniture from this period is that by W. Deonna (1938) on the furniture from Delos, and the supplementary article by G. Siebert (1973) dealing with the bronze appliquéés for this furniture. Other writers dealing with bronze fittings are B. Barr-Sharrar (1987), who discusses couch appliquéés with anthropomorphic busts, and S. Faust (1989), whose exemplary study covering the whole range of bed and couch appliquéés in different materials includes a typology and a chronological outline of their development.³⁴

Marble tables on two supports from the Hellenistic and Roman period are investigated by R. Cohon, who defines them as: 'artistic creations which are best regarded as sculpture' (Cohon 1985, 1). He covers no fewer than 290 examples in his catalogue, and in the introductory text discusses the quality, the workshops, the provenance, the makers and the iconography of the subject. A similar study, this time of marble table legs comes from C.F. Moss (1988), whose type 10 (tables with four straight legs) had already been dealt with at length by C. Boube-Piccot (1968-1972).

C.L. Ransom (1902, 125-139) looked at several Hellenistic and Roman pieces of wooden furniture in Berlin.

The Apennine peninsula before the Roman period

The grave finds from Verucchio near Rimini, which date from the 7th century B.C., are very important for our knowledge of prehistoric Italian furniture. They are described in articles by G.V. Gentili (1985, 1985A, 1986, 1988) and include three-legged tables with round tops, foot stools and parts of round thrones with back rests. F. Jurgeit (1990, 1-32) has published four fragments of bronze leaf from a throne in Karlsruhe (Badisches Landesmuseum), which reveal major similarities with the wooden examples from Verucchio.

Richter's (1966, 85-96) brief survey of Etruscan furniture is greatly improved and expanded by S. Steingraber (1979), who pays special attention to its form and function, formulates a typology and explores its reliance on Greek and eastern models. He outlines the chronological development and geographical distribution of all the furniture types. Richter's idea that Etruscan furniture was almost wholly dependent on the Greek models (Richter 1926, 102; 1966, 4 and 85) is qualified by Steingraber. He argues that although around half of Etruscan furniture forms may be based on Greek models, these often exhibit signs of direct inspiration from eastern prototypes, while many others (c 25%) have an Italic origin. The influence of Greek furniture forms in Etruria begins in the 7th century B.C., but only really takes hold in the course of the 6th century B.C. (Steingraber 1981).

Northern and Central Europe

B. Grodde (1989), in her study of wooden furniture in pre- and proto-historic northern and central Europe, sets herself the task of producing a cultural-historical analysis of furniture forms. Roman furniture remains outside the scope of her study, but she does deal with a number of pieces which show the influence of the Graeco-Roman world (see, for example, Grodde 1989, 41). In fact, for a variety of reasons, little wooden furniture from the Roman Imperial period has survived in these areas (Grodde 1989, 41-42). Ground conditions are not generally conducive to preservation, furniture was often removed when a settlement was abandoned and, according to her, excavation methods have been frequently inadequate. Above all, grave finds usually come from cremation sites which yield little or no wood remains.

³³ Cf. Reincke 1935, 505.

³⁴ For the Hellenistic period see also Ransom 1902 and 1905; Richter 1926 and 1966; Wasowicz 1966.

The Roman period

In Richter's view (1926, 117 and 1966, 97), the Romans did little more than adopt and develop Greek furniture forms.³⁵ Koeppen and Breuer (1904, 214) had already concluded that the Romans were eclectics rather than innovators in the field of furniture. They found it difficult to distinguish between Hellenistic and Roman furniture since they saw the Romans as merely adapting existing Greek forms to their own taste.³⁶ However, recent studies make it clear that the distinction can be soundly made.³⁷

B.M Felletti Maj (1940) gives a very superficial account of Roman furniture. Much more penetrating is the study of J. Liversidge (1955), who produces a typology of furniture in Roman Britain by combining originals and depictions, and in the process discusses a wide range of material from elsewhere. The fact that the furniture in this remote part of the Empire has so much in common with that from other regions illustrates an important characteristic of Roman furniture which both Liversidge (1955, 2) and Richter (1966,97) observe: the uniformity of the furniture found in widely separated regions. While endorsing this view, we otherwise regard Richter's account of Roman furniture as no more than summary;³⁸ she fails to see those developments which did take place and is therefore satisfied with simply presenting the forms which she herself has defined (Richter 1966, 98). In Chapter 3 we will argue that this approach requires serious revision.

Reincke (1935, 501-502) proposes that houses in the early Roman period contained only functional furniture and that wall decoration was more important than furniture in domestic appointments. In his view, a total change takes place under Hellenistic influence when a 'baroque' form of luxury appears in the design of furniture, which then becomes an essential component of interior decoration. The idea that the typical Roman interior was primarily appointed for luxury has long lent a negative tinge to judgements about the furniture from this period.³⁹ It is our firm conviction that this is a misconception based largely on the lack of sources available for ordinary everyday furniture.⁴⁰ Richter, for example, relies heavily on show pieces in her survey of the subject. A study of the ordinary furniture found in Herculaneum reveals how distorted a picture this gives.

Apart from these general surveys, all sorts of detailed studies have appeared. P. Soprano (1950) presents a catalogue of *triclinia* in the gardens and *peristylia* of Pompeii. The work of O. Wanscher (1980) looks at the *sella curulis* as the official seat of Roman magistrates, as does part of the large-scale study by T. Schäfer (1989, 24-195 and Kat. 233-363). An article by the same author further examines the so-called *bisellia*, those typically Roman seats of honour, which could be acquired on grounds of merit.⁴¹ Reed (wickerwork) armchairs are discussed in an article by W.A. Daszewski (1966, 347-359).

Cohon and Moss (1980) have produced a catalogue of all the marble tables in Pompeii and Herculaneum.⁴² They have also published separate monographs on Roman marble tables, the former looking at table supports (Cohon 1985) and the latter at table legs (Moss 1988).

³⁵ Roman furniture is dealt with in Richter 1926, 117-145 and 1966, 97-116.

³⁶ Cf. Pernice 1927, 367-368; Feulner 1930, 21 and 1980, 20.

³⁷ Cf. for example Faust 1989, *passim*.

³⁸ Richter 1966, 97-116.

³⁹ Reincke 1935, 507 suggests the following explanation for this: 'Das Luxusbedürfnis der Römer, das den Wert und die Pracht des verwandten Materials höher schätzt als die Schönheit der tektonischen Form, führt zu dekorativer Überladung und oft unschöner Stilmischung.' Cf. Koeppen/Breuer 1904, 169-170.

⁴⁰ Koeppen and Breuer 1904, 190 are quite aware of this: '... von dem Mobiliar des armen Bürgers wissen wir infolge des fast völligen Versagens der Quellen eigentlich blutwenig'. See also Feulner 1930, 12 and 1980, 14.

⁴¹ Schäfer 1990, 307-345. For the arguments against p. 328-331 of his Kat. 5, where he interprets the two beds/couches in the *salutatio* on the grave of Vestorius Priscus at Pompeii as *bisellia*, see Mols/Moormann (1996). For *sellae curules* see also Schäfer 1990A and Klatt 1995.

⁴² The manuscript of this article is in the library of the Soprintendenza Archeologica di Pompei.

A supplement to Moss's study is the article by R.M. Schneider (1992) on *trapezophoroi* in the form of eastern table servants. In the light of this, table supports featuring a figure usually identified as Attis in the past should perhaps be reinterpreted. It could now be regarded as a dumb waiter.

E.G. Budde (1940) assembled a lot of material on Roman cupboards, but we cannot endorse his view (Budde 1940, 5-7) that cupboards were of Greek origin (see § 3.5.1). E. Pernice (1932) and M. Kemkes (1991, 299-387) look at wooden chests with bronze fittings.

Bronze furniture and bronze appliquéés for wooden furniture are also featured by various authors. E. Talamo Vattimo and M. Cima di Puolo (1990, 51-79) supplement a disappointing text with some excellent photographic documentation.⁴³ Studies by C. Boube-Piccot (1960 and 1975) contain bronze furniture and furniture appliquéés from Morocco. Finally the monographs of B. Barr-Sharrar (1987) and S. Faust (1989) deal with Roman, as well as with Hellenistic, couch appliquéés.

P. Eames (1977) examines the perpetuation and transformation of Roman styles in the medieval furniture of France, England and the Low Countries from the 12th to the 15th centuries.

1.4 The wooden furniture from Herculaneum in the archaeological literature

The wooden furniture from Herculaneum has so far occupied an extremely minor place in the archaeological literature. Most of the works which mention these pieces are dealing generally with the Herculaneum excavations or are monographs on a subject relating to the town. M. Ruggiero (1885), who published the archive material from the first hundred and fifty years of excavations, discusses the first furniture finds. His collection of sources is of priceless value for all scholars whose work takes in Herculaneum. The passages relevant to furniture in his collection of archive material are therefore included in appendix 1 of the present study, with additional information from other archivalia.

A. Maiuri, the most important 20th century excavator of Herculaneum, never managed to publish the furniture. In his book on the 'nuovi scavi', published in 1958, he refers several times to a proposed second volume which was to cover the finds themselves, but unfortunately this never appeared. In his general overview he does mention many of the surviving pieces, as well as several which could not be preserved, yet one looks in vain for detailed descriptions. The material was never processed after Maiuri's death and has to a large extent remained uncatalogued. With few exceptions, scholars who have published more general works on Herculaneum since 1958 have relied on Maiuri's comments when they come to the furniture.⁴⁴

The only signs of furniture encountered by M.G. Cerulli Irelli in the Casa del Colonnato Tuscanico were appliquéés. The disappearance of the wood can be largely ascribed to the systematic digging of shafts through the house in the Bourbon period.⁴⁵ The furniture which was found during her excavations on the *Decumanus Maximus* has never been published.

New interest in the furniture from those in charge of the excavations only developed at the end of the 1980's. This resulted in new restorations and an exhibition of several pieces in the Castel Sant'Angelo in Rome. The exhibited pieces were published in a catalogue produced by T. Budetta and M. Pagano (1988).⁴⁶

In the literature on furniture, only a few of the wooden pieces from Herculaneum receive any attention. Some of them are included in the survey of Roman furniture given by B.M. Felletti Maj (1940), while a small monograph on cupboards by E.G. Budde (1940, 12-13) gives more extensive

⁴³ See the review by Mols (1995).

⁴⁴ Amongst these general works are Maiuri 1958A; Kusch 1960; Cretella 1961; Maiuri 1961; Maiuri 1964; Brion 1965; De Franciscis 1974; Zefiro 1979; De Vos/De Vos 1982; Gore 1984; Deiss 1985. Passages relating to furniture are given in the catalogue under code 5.

⁴⁵ The appliquéés are published in Cerulli Irelli 1974.

⁴⁶ See also Budetta 1987 and 1989.

treatment to one piece, the *aedicula* (household shrine) in the Casa del Sacello di Legno (cat.no. 29, fig. 139). Liversidge (1955, 40) includes a table from Herculaneum (cat.no. 18, fig. 111) in her survey. The standard work by G.M.A. Richter (1966) gives wooden furniture (and thus also the Herculaneum material) a secondary place. Richter mentions only the cradle (cat.no. 11, fig. 73). Since, according to her, the wood (from which most Roman furniture was made) had been entirely lost, the largest group of furniture used by the Romans was paid very little attention. Yet from the references made in Maiuri's book (1958) (which she must have known because it was the source of her information on the cradle) she could have come to quite a different conclusion. However fragmentarily preserved, the Herculaneum material forms a unique remnant of ordinary furniture and reveals it as far simpler than the unusually expensive bronze and marble examples upon which Richter heavily based her survey.

After Richter, the Herculaneum furniture is only sporadically mentioned in the archaeological literature. Some authors turn out to be better informed about it than others. A. Wasowicz (1966) mentions a number of pieces when writing about woodworking amongst the Greeks. D.G. Orr (1978 and 1980) examines several wooden *aediculae* (household shrines) and F. Von Zglinicki (1979) deals with the cradle (cat.no 11). A number of pieces are discussed by J. Clarke (1991) in his chapter on Fourth Style ensembles. Elsewhere the Herculaneum furniture is usually only cited or pictured without further description.⁴⁷

The bronze elements also receive a few mentions. In Ch. Boube-Piccot's (1975) excellent work on Moroccan appliqués, several of the Herculaneum pieces are mentioned by way of comparison, while an article by T. Schäfer (1979) deals with two bronze seats of office (*sellae curules*) which come from the theatre in Herculaneum.⁴⁸ The legs of one of these seats have survived (Museo Nazionale at Naples, inv. 73152), but the other has disappeared (Museo Nazionale at Naples, inv. 73153). Finally several appliqués for *fulcra* (the raised rests at the heads of dining couches) from Herculaneum have been recently described by S. Faust, who also includes seven beds from Herculaneum in her catalogue.⁴⁹

The resounding conclusion is that, as a result of the low priority accorded it by the excavators, this furniture has been anything but published, and that this omission is the main reason why the Herculaneum material has not received the place it deserves in studies of Roman furniture. It is our view, however, that when the wooden furniture from Herculaneum is omitted from such studies, then important evidence on the art of antique furniture making is being disregarded.

1.5 Aims and lines of enquiry

The aim in this study is to publish the wooden furniture from Herculaneum in full for the first time. The emphasis will be placed on the form of the surviving pieces, on the material and techniques involved in their manufacture, and on the function they had for the inhabitants of the town.

The research follows five lines of enquiry. These are fundamentally archaeological in nature, and are therefore pursued according to the criteria which are commonly used in the history of art and of technical development.

⁴⁷ The most important of these are given in the catalogue under code 5 (literature relating to the individual pieces); examples are: Liversidge 1950; Vaulina/Wasowicz 1974, 167; Packer 1975; Adam 1984, 220-221; Tran Tam Tinh 1988, 104; Mastroberardo 1992, 147. More recently there have been articles by Mols (1991-1992; 1993; 1993A), in which several pieces are closely examined as preliminary studies for the present book.

⁴⁸ See also De Kind 1992, 30.

⁴⁹ Appliqués for *fulcra*: Faust 1989, 161 (Kat. 32), 174 (Kat. 129, 130 and 131), 185 (Kat. 214, 216 and 217); see also Faust 1992, 107; couches/beds: Faust 1989, 173-174, Kat. 122-127. See also § 3.2.1 of the present work and the review of Faust 1989: Mols 1992, 191-193.

In Chapter 2 we begin by asking why, on the one hand, such a large quantity of wooden furniture has survived in one small town while, on the other hand, an even larger quantity has been lost (in spite of apparently favourable conditions). Wherever the excavation reports could be traced, these are included in the research. Besides comments relating to the form and find circumstances of the preserved pieces, the reports also contain information on furniture which was lost either during or after discovery. Before allowing ourselves to accept their descriptions of these vanished pieces, we test the reliability of the excavation reports by examining the information they give about surviving pieces. The reports also enable us to gauge the value placed upon the wooden furniture in the three centuries since the commencement of excavations. We also look at how the furniture has been handled since the 1920's, when it became possible to preserve the wood.

In Chapter 3 we examine the specific forms of furniture which occur in Herculaneum and how these relate to other furniture from the Roman period. We ask how far the forms encountered in Herculaneum stand on their own, and how far they belong to categories of furniture which were more generally dispersed: can they be regarded in essence or in detail as local or Roman innovations, or are they derived from forms which were common elsewhere, for example in Egypt, Greece or Etruria? Our aim here is to relate the Herculaneum furniture to other contemporary sources so as to place it in the light of the time when it was in use.⁵⁰ The Herculaneum material is ideally suited to the study of furniture design in a single town, because here there is no question of so-called negative selection ('Negativauslese'): the settlement was not abandoned, with the inhabitants able to carry their household effects away with them, but engulfed in its entirety. This has ensured that in many houses all the household effects have survived.

In Chapter 4 close attention is paid to the technical side of the furniture. An analysis of wood samples helps us to discover the types of wood from which it was made and an attempt is made to determine where this wood came from. There is an inventory made (so far as is possible) of the woodwork joints employed. From this we can infer the cabinetmakers' knowledge of the properties of specific joints. We also examine the wood for marks left by the craftsmen as we seek to discover what tools they used. For example, small details show how it was worked with great precision on the lathe and how specialized moulding planes were used to produce a variety of mouldings. The furniture also tells us a lot about the finishing options available, including carving, inlay and veneer. Taken as a whole, these technical observations provide an insight into the level of craftsmanship possessed by the furniture makers of Herculaneum. They are also of value to those wishing to attempt authentic reconstructions of original pieces. In a number of cases, the furniture was more complete at the moment of discovery than it is at present. The original condition can only be ascertained by comparing the current situation with the description of the piece in the excavation reports (which also provide technical data). In questions of detail these are usually the only source of information: for example, the red paint which is several times mentioned in the reports is no longer visible on any piece. Lack of source material prevents us from giving more than a superficial answer to the question: how specialized were the Herculaneum furniture makers? We can, however, compare our technical findings with what is known from the study of other wooden furniture from the Roman period.

The wooden furniture in Herculaneum is sometimes equipped with elements made of other materials. We find bone hinges for cupboards, bronze fittings for beds, and bronze and iron hinges and locks on cupboards and chests. The study of these fittings and the way they are attached to the furniture is of general interest for any reconstruction of furniture of which only the non-wooden elements have survived. This subject is also dealt with in Chapter 4.

Chapter 5 shifts the attention to the function of the furniture. The criteria used for determining function include the form of the piece, the find context and the shape, size and decoration of the

⁵⁰ Cf. Eames 1977, XI who adopts a similar approach in her research into medieval furniture.

room in which it stood. Furthermore, if the original name of a particular type of furniture is known, any information given in the written sources is included in the analysis. The overall picture of the function of furniture of Herculaneum is compared with what is known from both the archaeological and written sources about Roman furniture in general. The excavation reports are again of key importance, this time in helping to determine the function of both the furniture and the rooms of the excavated houses.

1.6 Sources for our knowledge of Roman furniture

Various sources are used as basic comparative material. We regard original pieces as a primary source, and depictions and written material as secondary sources. The combination of the two reveals the wealth of forms available to the Romans and gives us insight into the techniques used by their furniture makers. It also provides clues as to how the furniture was used.

The primary material used for comparison is of course the surviving wooden furniture from elsewhere in the Roman world. Although there are very few pieces available, these often reveal major similarities with the Herculaneum material. There are important sites in Egypt and the Crimea, where wood has survived as a result of the dry environment. Another important group for the purposes of comparison is provided by the cement or plaster casts of cavities left by wooden furniture in the volcanic material and lapilli in Pompeii. Since most of these have not yet been adequately published, they are described in appendix 3. Sometimes recourse is made of pieces made of other materials, such as bronze or stone, whenever these display formal, technical or functional similarities with the Herculaneum material.

For purposes of indirect comparison we mainly make use of depictions found on reliefs, wall paintings, mosaics or artefacts, and here we are tied to the published material. However, if wall paintings are used as evidence for Roman furniture forms then extra caution is required. In many of the scenes which are inspired by Greek originals it is Greek rather than Roman furniture which is depicted. The point is not new.⁵¹ Richter (1966, 97) herself makes it, but then proceeds to use these sources nevertheless. A second danger is that depictions can be *topoi* or conventions, rooted in a tradition and not a reflection of the contemporary reality. This seems to be the case in Roman grave reliefs, on which the so-called funeral banquet is represented.⁵² In this genre the scheme of the reclining man on the right and the sitting woman on the left is so exact an imitation of Greek examples that it is very unlikely that Roman usage is being conveyed. It is probable, therefore, that conservative furniture is also being depicted.⁵³

The written sources provide plenty of references to the form, terminology and function of Roman wooden furniture, as well as valuable information on cabinetmaking techniques. However, because we possess no Roman text devoted to furniture, we are forced to rely on brief remarks made by writers throughout the whole of Roman history. Important authors in this respect are Varro (*De Lingua Latina*), Pliny (*Naturalis Historia*) and the 6th century writer Isidorus of Seville, who borrows a lot of material from earlier authors for his *Origines*. The information provided by literary sources, however, relates largely to the higher circles of society. It is often the expensive or the eccentric pieces which 'make it into literature' and simple everyday furniture is mentioned much less often. The collections of written sources on furniture, which were largely assembled in the late 19th century, are so full of gaps that we have here made a new list which aims at

⁵¹ Cf. Ransom 1905, 14; Pernice 1927, 368 (a review of Richter 1926); Peters 1993, 216.

⁵² Cf. Dentzer 1982, *passim*. He here speaks of the 'banquet couché'.

⁵³ The same phenomenon appears in many depictions of furniture from the Near East, in which the repetition of forms generally has a symbolic meaning (Baker 1966, 175).

completeness.⁵⁴

No one type of source can fully inform us about Roman wooden furniture on its own. In the case of the archaeological sources, this is due to the perishable nature of the material. In the case of the literary sources, it is mainly because antique authors tend to write about furniture from only the higher social circles. Both sources must therefore be handled with care. Only in combination do they begin to reflect the reality of the subject.

1.7 Geographical and chronological parameters

Geographically, this study is limited to the wooden furniture found in Herculaneum itself. It is unlikely that any of the preserved pieces were imported from either inside or outside the Empire,⁵⁵ but because of the the high degree of similarity which extended throughout the Roman world, furniture from all over the Empire will be considered for purposes of comparison. The casts of furniture from neighbouring Pompeii are particularly valuable as supplementary material. Chronologically, given the average life-span of wooden furniture, this material almost certainly stems from the last century of the town's existence. Although no conclusive evidence can be produced to prove it, the furniture was probably all produced after Herculaneum became a Roman *municipium* (89 B.C.). We will therefore regard all the forms of furniture found there as Roman and assume that all were still in use in 79 A.D.. Nevertheless, we will attempt to place the material from Herculaneum (and Pompeii) in a larger chronological framework, that of the development of furniture throughout the whole Roman period.

1.8 'Nachleben'

Very soon after the commencement of excavations in Herculaneum and Pompeii we can observe a renaissance of the classical Graeco-Roman model in the furniture of various European countries and in America. This phenomenon, known as neo-classicism, which also manifested itself in architecture and in interior decoration, was partly the consequence of early publications on the excavations. These included the volumes of 'Le Antichità di Ercolano Esposte' (Napoli 1755 and after) and the letters of Johann Joachim Winckelmann.⁵⁶ Several of the pieces of furniture pictured in 'Le Antichità di Ercolano Esposte' had an enormous influence. In particular, the bronze tripod with legs decorated with sphinxes was used as a model for many tables and served, amongst other things, as a model for the so-called *trespoli*.⁵⁷ Indeed, the motif of legs decorated with fantastic animals was worked into several other forms of furniture (fig. 4).

In addition, Pompeii and Herculaneum became fixed points on the Grand Tour, with many travellers stopping to pay a visit to the finds. The wooden furniture had absolutely no influence on 18th and 19th century recreations, however, and the most important sources for neo-classical design in furniture were the depictions of furniture (especially in the wall paintings) and the bronze appliquéés found in the Vesuvius towns. Bronze fittings from Roman beds were sometimes worked

⁵⁴ Amongst the surveys of this field is the work of Blümner (1879, 1885 and 1911). Many of the texts assembled by him have been used by subsequent writers, including Richter (1926 and 1966, *passim*).

⁵⁵ An exception to this rule are chests containing shop goods, which are mentioned in the excavation reports. These pieces, which were possibly made in the same place as the articles packed in them, have unfortunately not survived. On this subject see also § 5.5 below (chests).

⁵⁶ Cf. Praz 1979, 36 and 39; Pirzio Biroli Stefanelli 1990, 1-3. For the influence of 'Le Antichità di Ercolano Esposte' on Danish furniture design/art from the late 18th century onwards see: Gelfer-Jørgensen 1988 and 1990. For its influence on decorative art in general, see Allroggen-Bedel 1993.

⁵⁷ Praz (1979, 39) laments this: 'E la cosa ha degenerato come il suo nome'.

into inaccurate reconstructions of chairs, giving rise to those modern creations which adorn genre painting.⁵⁸ The furniture forms which emerged were usually not copies of Roman forms but of Greek and Hellenistic models, since the styles depicted on wall paintings were almost exclusively of Greek or Hellenistic origin.⁵⁹ The simpler Roman furniture which was shown in paintings of mundane Roman scenes was apparently considered inferior and no attention was paid to it. Such pieces were also less often included in publications. Visitors to the excavations in Herculaneum certainly saw wooden furniture, but these seem to have made little or no impression. Perhaps this can be put down to its carbonized state, which robbed it of much of its original form and decoration. Moreover, since the wood could not be preserved, the pieces decayed rapidly after they were uncovered. In the case of the storage furniture, interest was confined to the contents. For all these reasons, the 'Nachleben' of Herculaneum's wooden furniture has yet to begin.

⁵⁸ Cf. Praz 1976-1980, 124.

⁵⁹ Cf. Baker 1966, 286-288.

CHAPTER 2

CARBONIZATION, EXCAVATION AND PRESERVATION

2.1 Introduction

The 41 pieces of wooden furniture which are still preserved in Herculaneum can be classified as follows according to form: beds and couches (12), tables (6), seating (4) and storage furniture (12 cupboards, 1 chest). Besides these more or less complete examples there are wooden fragments from several other pieces (1 bed, 3 tables and 2 cupboards). Further fragments which seem to come from furniture cannot be clearly identified (see appendix 2). All these finds were far from intact when discovered. Several pieces had been displaced by the force of the lava as it entered the houses and most were found in fragments. Yet in many cases they were well enough preserved to allow a faithful reconstruction of the original form to be made.

Bone and metal fittings were found on several wooden pieces. Bone hinges were mounted on some of the storage furniture and bronze fittings appeared on some of the beds and couches in a variety of forms: casing for turned legs, corner brackets and appliquéés for *fulcra*. Bronze and iron were also used in the hinges and locks of storage furniture and as plating for strong-boxes. Loose finds of bone and metal appliquéés were even more common and allow us to conclude that much more wooden furniture existed than has survived in the town. In the excavation reports of the Maiuri period alone there are indications of a total of 130 different wooden pieces. For the much smaller area which was uncovered in the 19th century, there is still enough data to identify some 60 pieces. If we then include the fact that, for various reasons, twelve of the preserved pieces are not mentioned in the archive material, the total number of pieces found in the 19th and 20th centuries rises above the 200 mark. To this we can add figures gleaned from the 18th century journals, where there is mention of 93 pieces and fragments thereof, including 58 bone hinge segments. Unfortunately it is often impossible to establish the find spots for pieces found during these early excavations (which anyway derive from an area much larger than the current excavated area of the town). Yet taking all these factors into account it can be confidently assumed that the number of preserved pieces is but a fraction of what must have existed before the eruption.

The choice of material for the catalogue has been made on the following basis. The preserved wooden pieces are all described. Of the fittings and appliquéés in other materials, only those which were found on the preserved wooden pieces are included. Thus the bronze appliquéés for *fulcra*, for example, fall outside the scope of the catalogue, because they were never found in conjunction with wood. To give some idea of the nature and number of loose finds, these are included in appendix 1. Here we present an overview of all the wooden furniture and appliquéés ever found in Herculaneum, based on the archive material.

In this chapter we are primarily concerned with what happened to the wooden furniture at the moment of the eruption and thereafter. We then ask how the data we now have should be interpreted, both in the light of the preserved pieces themselves and in that of the archive material. We first look at the circumstances which led to the preservation of the wood (and other organic material) via carbonization and at the theories which have been advanced on the subject (§ 2.2). We next discuss various complications which have contributed to the loss of many pieces, in spite of circumstances which were apparently favourable to preservation (§ 2.3). There follows an account of the history of the excavations, in so far as this is relevant to the wooden furniture, and we examine the value placed upon this material at different periods (§ 2.4). The focus then shifts to the preserved furniture itself and we explore the find spots (§ 2.5), the modern preservation treatment it has received, and the reconstructions and additions which it has undergone since its discovery (§ 2.6). The present whereabouts and the state of preservation of the surviving pieces

is then reported (§ 2.7) and we end by asking to what extent the surviving material can be regarded as representative (§ 2.8). Beyond this the history of the town of Herculaneum is not dealt with; for this please refer to the account given by De Kind.⁶⁰

2.2 Theories about the carbonization of wood in Herculaneum

Soon after the commencement of systematic excavations in Herculaneum the assumption was that the organic material had been seared by the heat of the lava flow (Della Torre 1745).⁶¹ The lava would then have cut off the oxygen supply, preventing the fire from developing further. The process could be compared to the way in which charcoal had been manufactured for centuries. This view was challenged by M. Ruggiero (1885, VI) and A. Maiuri (1932, 17; 1941, 132 and 177; 1946, 367). Ruggiero argued that there was no layer of ash found on the carbonized wood, which would have been the case had it been burned. Maiuri agreed with him, believing the process of carbonization to have been gradual (partly due to the damp environment in which the wood had lain for so long) and not a direct result of the eruption.⁶² In their view the town was covered with damp mud even before it was overwhelmed by lava, the result of a tidal wave coming in from the sea.⁶³ Support came from the vulcanologist C.G.I. Friedlaender, who from 1914 was the director of the institute of vulcanology in Naples which bore his name. Friedlaender shared his ideas about the preservation of organic material in a letter to Maiuri dated 22 June 1931.⁶⁴ He regards fossilization as the cause of the carbonization process.⁶⁵ In such a process it is not a question of burning, but of the slow transformation of the wood over the centuries. This type of transformation is called ‘coalification’ by T. Gorczynski (1969, 154), who describes it as follows: ‘Increase of carbon and decrease of hydrogen: carbon dioxide, methane and other similar substances are released during this process The process of coalification is not fully understood yet. At the beginning it takes place with some aeration, but later on without air exchange’. The great objection to Ruggiero’s and Maiuri’s view of carbonization is that a time span much longer than a mere two millennia is required for the process described by Gorczynski, certainly when larger objects are involved. It has been shown that some plant material in Pompeii and Herculaneum has indeed carbonized under the influence of anaerobic bacteria (Meyer 1988, 184-185), but this applies only to small items.

⁶⁰ De Kind 1992, 19-41 and 1998 (with literature). The street commonly referred to as the *Decumanus Maximus* in Herculaneum does not in our view merit this title. The designation *Decumanus Maximus* is usually used to denote the central lateral thoroughfare of the town and we think it more likely that Herculaneum’s version lies at least one block or *insula* further to the north, underneath the modern town. The so-called *Decumanus Maximus* is certainly an impressive street, however, and for clarity’s sake we have followed convention in using the name throughout the text.

⁶¹ We also find this in a letter from Winckelmann to Bianconi-Rauch, dated 31 March 1758 (ed. Rehm/Diepolder 1952, 339 Nr. 207), where the wood in the cupboards in the Villa dei Papiri comes up: ‘Es sind über 800 Stücke an zweyen Orten gefunden, und zwar in ihren Schränken, welche so, wie die Schriften durch die Glut des feurigen Stromes, welcher die Stadt Herculaneum bedecket, in Kohlen verwandelt worden sind.’

⁶² Ruggiero 1885, VI: ‘Il secondo errore non meno grave è l’incendio, di cui parve falsamente veder le tracce in tutti i legni e le altre materie combustibili convertite in carbone, non avvertendo fra l’altro che questa trasformazione del legno è anche opera naturale del tempo, dell’umido e del non esser rimasto all’aria aperta; sotto le quali condizioni perde gran parte dell’acqua che entra nella sua composizione e si riduce in quella particolar sorte di carbone; non considerando che il simile è avvenuto dei legni rimasti per molti secoli in fondo alle acque; che il legno e le altre materie combustibili, bruciando, danno sempre alquanto cenere nelle facce superiori, della qual cenere non si scorge vestigio né in Ercolano né in Pompei.’ Cf. Maiuri 1958, 77 nota 25 and Maiuri 1958, 25: ‘Ma ... Ercolano ci dà, in luogo del cavo delle forme, il vero e proprio oggetto ligneo; per un processo di conservazione umida quello che l’Egitto ci dà per un processo di conservazione secca, il mobilio in legno, ...’

⁶³ Maiuri (1941, 177) calls this: ‘fenomeno alluvionale che immediatamente seguì la prima violenta fase del parossismo eruttivo.’

⁶⁴ The letter is included in the archive folders which also contain the excavation reports: ‘Illustre professore, Confermo la Sua del 18. Alle Sue domande posso rispondere quanto segue: ... 4° La buona conservazione delle materie vegetali e anche la fossilizzazione del legno sono da attribuirsi al fatto, che gli strati di cenerite e tufo formati dal fango permettono soltanto un passaggio molto lento, tanto dell’aria quanto dell’acqua, mentre gli strati dei lapilli e pomici di Pompei sono molto più permeabili.’

⁶⁵ Cf. Maiuri 1932, 17.

More recent studies demonstrate that the original view of carbonization through burning is the correct one. R.C. Maury has provided some hard evidence by examining wood taken from Herculaneum. His analyses reveal that the wood was carbonized by a heat of around 400°C. From this he concludes that the town was engulfed not by a tidal wave, but by a hot flow of volcanic material.⁶⁶ His conclusion that carbonization took place during the eruption is confirmed by vulcanological studies, which have established that Herculaneum was flooded by various intensely hot streams of liquid lava. These carbonized the wood and then hardened, forming the crust under which the town lay hidden for over sixteen centuries.⁶⁷

The effect of the lava was thus paradoxical. Although in many cases the force of the flow displaced and damaged the furniture, the accompanying heat caused the wood to carbonize. Then by rapidly shutting off the oxygen, the lava halted the burning process before the wood was consumed. Indeed, in some of the thicker timbers the wood has only carbonized on the surface and the internal structure remains intact. Moreover, the exclusion of oxygen by the congealed lava has prevented the wood from being attacked by fungus and micro-organisms.

The degree to which the carbonization process has occurred is not the same throughout the excavations. In the dryer, high-lying parts of the town the wood is very dark, almost black, while in the lower lying parts, especially at the coast, a much more authentic exterior is preserved. Unfortunately no furniture has been found in this lower area. It has been suggested that these differences can be ascribed to the condition of the wood at the time of the eruption. The wood near the coast would have been only recently felled, making it more resistant to carbonization.⁶⁸ It should also be remembered that the level of the groundwater has risen since 79 A.D., which has preserved the wood in the low-lying parts of the town better than that found in higher areas.

2.3 Complications in the preservation of wood at Herculaneum

No method of preserving wooden furniture was available in Herculaneum until the 20th century. Yet for a piece to have survived this long a variety of factors will have had to be favourable. Initially there was the force with which the lava flow entered each building during the eruption itself. This will have determined whether the furniture remained in its original place, was displaced or wholly or partially destroyed. The late C. Formicola, the restorer working with the excavation team during the 1950's and '60's, was able to calculate that the bed in the Collegio della Augustali (cat.no. 10, fig. 66) was found approximately 6 metres from its original position and had been driven upwards by the force of the lava. In the worst cases furniture was crushed against walls by the flow. When discovered such pieces were unrecognizable as furniture and thus have been lost.

Secondly, there were the shafts which were dug through the rooms during the 18th century excavations. These sometimes went straight through pieces of furniture, which were thus partly or wholly lost. Further, if storage furniture was encountered undamaged it was crudely broken open

⁶⁶ The passage in Maury (1976, 297) which is important in this respect runs: 'Ainsi, les bois d'Herculanum, carbonisés de façon très homogène à environ 400° C, indiquent que la ville n'a pas été enfouie par un lahar, selon l'interprétation classique, mais par une formation de type dépôt de nuée ardente: les caractères pétrographiques de ce dépôt sont en accord avec cette conclusion (Di Girolamo, comm. pers. 1974).'

⁶⁷ Sigurdsson/Cashdollar/Sparks 1982, 43: 'The presence of charcoal within the deposit and the prevalence of carbonized wood in the buried houses of Herculaneum are strong evidence that the city was buried by hot pyroclastic flows. All wood in Herculaneum has been converted to carbon, a substantial indication that the deposits were largely the products of hot flows.' Cf. Sigurdsson/Carey/Cornell/Pescatore 1985, 362-363. For the eruption and its consequences for Herculaneum, see also: Pescatore/Sigurdsson 1993, 451-452.

⁶⁸ This hypothesis is put forward by Sigurdsson/Carey/Cornell/Pescatore (1985, 362-363): 'The surge layer contains a high proportion of wood, especially in the lower part, including both carbonized and uncarbonized logs. Possibly the former were dry, seasoned wood, while the latter were green wood, more resistant to carbonization.' For the different layers which covered Herculaneum during the eruption, see *id.*, 364-382.

since only the contents were of interest at that time. Rooms which had been visited in this way were usually so disturbed that only a fraction of the objects they had once contained were recoverable in the 19th and 20th centuries.⁶⁹

A third factor is the penetration of oxygen to the deeper layers, which in some places has led to the decay of all organic material.

The decisive moment came in 1927 when a method of preserving carbonized wood was introduced. The excavation reports suggest that serious attempts were only made to conserve a piece of furniture when it was found more or less complete, or when it still retained a recognizable form. Furniture which was seriously damaged during the eruption or which had been pierced by a Bourbon shaft has therefore not survived. One exception is the *biclinium*⁷⁰ in the Casa dell'Alcova (cat.no. 6, fig. 52) which was indeed cut by a shaft but which has survived nevertheless.

Even the 20th century excavations have led to the loss of some pieces. The volcanic material which covers the town is so hard that removing it requires the drilling of bore holes. However great the excavators' skill, many pieces of furniture will have been recognized as such only at too late a stage.

Again, wooden finds were often too brittle to preserve and crumbled immediately on contact with air. The restorer C. Formicola has given an account of a new preservation treatment tried out in the early sixties on furniture found during excavations on the *Decumanus Maximus*. S. Augusti describes the method, in which the wood was immersed in a solution of tannic acid and alcohol.⁷¹ Formicola, who was responsible for the experiment, immediately stopped it when several pieces disintegrated. Since then all the wood has been preserved in the traditional way: by the application of paraffin-wax mixed with carbon powder.

In nearly all the houses of Herculaneum there were rooms, and sometimes whole household units, which escaped the destructive excavations of the 18th century and whose contents remained virtually unharmed during the eruption and the ensuing subterranean centuries. The furniture we now have often comes from these rooms. The pieces themselves provide much information on the formal and technical aspects of Roman furniture making. In combination with other finds they help us to understand not only their own function but also that of the rooms in which they were found. It is here, in discovering more about the context of the finds, that the 20th century excavation reports are of such great importance.

2.4 The history of the excavations

An account of the course of the excavations at Herculaneum reveals how differently the wooden furniture has been regarded at different periods. And since the journals and reports which record finds of wooden furniture (see appendix 1) are always signed by the official responsible for the excavations, the following survey will place these figures in context.

In 1709 or 1710 Emmanuel-Maurice de Lorraine, Prince D'Elbeuf (1677-1763), accidentally

⁶⁹ Examples of pieces which were dug through in the 18th century and then found in fragments in the 19th and 20th centuries are included in appendix 1: 17-2-1871, bed (Casa dello Scheletro); 30-3-1928, bed (Casa dello Scheletro); 17-4-1928, bed (probably on the first floor of the Casa del Tramezzo di Legno); 27-9-1928, cupboard (Casa a Graticcio, ground floor; steps were taken to make a plaster cast of the remains, but this was never done); 5-12-1928, bed (Casa Sannitica, first floor); 16 and 17-7-1929, *biclinium* (Casa dell'Alcova, cat.no. 6); unknown date in 1931-1932, beds (Casa del Gran Portale, room 1); unknown date in 1931-1932, shop racks (IV 15-16); 5-1-1933, bed (Casa del Telaio, room H); 14-2-1933, chest (*Insula Orientalis* II 7); 16-11-1934, beds (Casa dell'Atrio Corinzio, room 11); 18-12-1939, bed (Casa dei Due Atri, room 3). Regarding the excavation of the Casa del Colonnato Tuscanico, G. Cerulli Irelli (1974, 12) writes: 'Nello scavo si incontrarono con molta frequenza i cunicoli scavati nel XVIII secolo i quali, com'è noto, iniziarono e furono più intensi proprio nella zona centrale della città', which well illustrates the almost systematic burrowing which went through the town in the 18th century.

⁷⁰ A combination of two beds which are joined together at an angle of 90°, see § 3.2.2.

⁷¹ Augusti 1961, 183 nota 2: 'una soluzione alcoolica di tannino decilitro 3 procento'.

discovered antique remains in the Portici area. The most important finds made under his leadership, which extended until 1716, were a small collection of marble statues.⁷² In 1738 activity was resumed under the Bourbon regimes of Charles (1734-1759) and Ferdinand IV (1759-1806 and 1815-1825) continuing uninterrupted during the brief Napoleonic interlude.⁷³ Excavations in this period were conducted in fits and starts by the construction of a system of shafts.

On 22 October 1738 the shaft excavations came under the more or less systematic control of Roque Joaquín de Alcubierre (1704-1780). The discovery of an inscription (CIL X 1443) on 13 January 1739 identified the building which was being excavated as a theatre and the town as Herculaneum. From 30 May 1741 until 30 August 1745 De Alcubierre was absent due to illness, his place being taken by Francesco Rorro and later by the French architect Pierre Bardet de Villeneuve. From 1750 to 1764 De Alcubierre was assisted by the Swiss architect Karl Weber and between 1764 and 1780 by Francesco La Vega (1737-1804). Following the death of De Alcubierre in 1780, La Vega was given responsibility for the excavations. However, in that very year the attention shifted to Pompeii and the excavations in Herculaneum came to a standstill. Until 12 October 1765 the journals of this first period of serious excavation were written in Spanish. Thereafter, La Vega tells us, the authorities insisted that all future journals were to be written in Italian.⁷⁴

Initially the excavations were far from systematic, but gradually, especially after the arrival of Karl Weber, they acquired a somewhat more scholarly character. This is apparent, amongst other things, from the detailed descriptions and maps which Weber had made of the Villa dei Papiri.⁷⁵ The scholarship of this early period did not however extend to the finds themselves. Indeed, the mine shaft period can best be described as treasure hunting. Interest was primarily focussed on beautiful statues, wall paintings, mosaics and jewelry, which were usually removed (without any attention being paid to their antique context) in order to serve as show pieces, first in the Museo Ercolanese in Portici and later in the Museo Borbonico (the present Museo Nazionale Archeologico) in Naples. There was minimal interest shown in such wooden furniture as was encountered via the shafts. For example, La Vega records the find of a table leg by saying no more than that it was carbonized and found in fragments.⁷⁶ More recent investigation of the 18th century shafts has revealed that they were often dug right through pieces of furniture with no apology. The shafts tended to follow the walls (internal and external) of buildings in order to provide some sense of direction, and it was precisely along the walls that most of the furniture stood. Whenever a cupboard or a chest was encountered, people were interested only in the contents. Storage furniture was not usually mentioned when finds were reported, but its existence can often be deduced from lists of large quantities of crockery, cooking utensils or valuables (presumably the contents of cupboards or chests) which were brought to the surface on single days.

Little is known about wood finds from this early period of excavation, although it is apparent from reports by French travellers that these did occur.⁷⁷ Just how much material was found in the 18th century will always remain a mystery. Only a few pieces are noted in the journals (see appendix 1) and one suspects that much more was found via the shafts than was ever recorded. This suspicion is confirmed by the fact that houses which were penetrated in the 18th century have

⁷² A survey of the history of the excavations: Ruggiero 1885, XIII-XVII; Maiuri 1958, 3-18. For a more detailed review, see: De Kind 1992, 43-60 and 1998; cf. Van Dolen/Moormann 1993, 39-43.

⁷³ Between 1806 and 1815 Naples was under French rule and for a short period (1808-1815) was governed by J. Murat, the brother-in-law of Napoleon.

⁷⁴ Cf. Ruggiero 1885, 473: 'Portici 'a 12 ottobre 1765. Eseguiſco l'ordine di S.M. ſecondo me l'ha ingiunto nella lettera del 5 di queſto, di ſcrivere cioè ciò che occorre in queſte ſcavazioni in idioma italiano, lo che ancora continuerò per lo avvenire.'

⁷⁵ These are published in Comparetti/De Petra 1883 and Pannuti 1983.

⁷⁶ Cf. appendix 1: 17-12-1776.

⁷⁷ Cf. Grell (1982, 51 and 89) who quotes a letter from Roland de la Platière, written between 1776 and 1778: 'On trouve de groſſes pièces de bois, comme des poutres réduites en charbon qui ſe coupe comme un fromage mou. J'en emporte un morceau, ainſi que la lave qui les environne.'

been excavated anew in the 20th and have yielded virtually no new finds.⁷⁸ The first record of any remains from wooden furniture concern four bone hinge segments found on the 8th and 11th August 1739; the first complete piece of furniture to be described is a wooden chest with bronze plating and appliqué (22 February 1741). Not one purely wooden piece is described in the early journals. At most there are short descriptions of fittings in some other material, such as bronze casing for bed legs, bronze fittings for storage furniture, or hinge segments in bone. Only three times do we encounter descriptions of wooden fragments of furniture with any certainty: these concern bed legs (28-8-1756), the veneered wood of a chest with gilding (13-10-1756) and a table leg (7-12-1776). In many cases the reporting of finds is so cursory that the nature of the fragment involved remains unclear.

Excavations were only resumed on 9 January 1828, now under the architect Carlo Bonucci. Instead of ransacking the houses via shafts, part of the town was now opened up from above. In the first two years work proceeded in the blocks of houses now known as the *Insulae* II, III and VII (which include the Casa di Aristide, Casa d'Argo, Casa del Genio and Casa dello Scheletro). Bonucci's reports, especially those from the first year (when most of the work was conducted), are characterized by great accuracy in the description of finds. With large intervals of inactivity, excavations continued under his leadership until 1855, when they ceased altogether. Work was resumed in 1869 under Giuseppe Fiorelli (1823-1896), with the daily direction initially in the hands of Nicola Pagano (briefly replaced due to illness by Camillo Lembo in 1869) and later (from October 1871) in those of Andrea Galella. In this period *Insula* III and VII were further excavated (Casa dello Scheletro, the west side of the Casa del Tramezzo di Legno, the Casa del Genio and the Casa di Galba). In 1874 and 1875 work was carried out in the so-called Forum Baths in *Insula* VI and excavations ceased on 16th November 1875.

In 1885 large portions of the archive material from the 18th and 19th centuries were assembled and published by Michele Ruggiero, in his 'Storia degli Scavi di Ercolano ricomposta sui documenti superstiti'. This work consists partly of the actual excavation journals and reports and partly of letters, of which those written by the 19th century excavation leaders to the supervisor in Naples are of great importance. As a supplement to Ruggiero's work, material from the earliest years of the shaft excavations under D'Alcubierre has been collected by Pannuti (1983). We have drawn upon both these collections for the archive material relevant to the study of the wooden furniture which is presented in appendix 1. In a number of cases relating to documents from the period 1827-1885, Ruggiero has based himself on copies of the original manuscripts, which he has labelled '*copia*'. In appendix 1 the original texts are given wherever possible. These are preserved, together with the '*copia*', in the Archive of the Soprintendenza Archeologica in Naples. Finally, appendix 1 includes a number of unpublished lists which record the dispatch (or arrival) of finds from Herculaneum to the Museo Nazionale in Naples.

The 19th century excavations can be regarded as much more scientifically sound than those conducted in the preceding century. Far more care was taken of the organic material, which is at times exhaustively described. Alas, only a small part of all this material (primarily textiles and foodstuffs in carbonized form) has survived. It is now preserved in the Museo Nazionale in Naples. The Magazzino Archeologico in Herculaneum itself contain no finds from these early excavations. Anything of any value, organic as well as inorganic, was removed to Naples in the 19th century. This can be gathered, for example, from the many receipts for pieces arriving at the Museo Nazionale in Naples. These can be seen in the archive of the Soprintendenza. Their relevance here lies in their reference to fittings and appliqué in materials such as bone and bronze which would

⁷⁸ Thus Tran Tam Tinh (1988, 97) laments over the Casa dei Cervi: 'Comment était meublée cette maison bourgeoise? Combien d'objets d'art et d'usage quotidien les Bourbons ont-ils découverts, récoltés et ramenés à la surface lors de leurs pérégrinations souterraines dans l'emplacement de la Casa dei Cervi? Etant donné l'absence de plan topographique de la fouille et de la distribution des équipes, personne ne saurait le dire.'

once have adorned otherwise wooden furniture.

The fact that no single wooden piece of furniture has survived from the excavations conducted before 1900 can be ascribed to the lack of an adequate method of preserving carbonized wood. In most cases the wood disintegrated as soon as it was exposed to the open air.⁷⁹

As in the preceding century, 19th century furniture finds mainly involve bronze (bed legs, hinge and lock fittings for storage furniture) and bone fittings (hinge segments from storage furniture). The descriptions of these objects are now more thorough, however, and often enable us to precisely identify the pieces from which they came. We also find many descriptions of the wooden furniture itself, although measurements are almost never provided and it is therefore difficult for the reader to clearly imagine what is being described. The record of finds on the upper storey of the Casa d'Argo (II 2) from January to September 1828 is very extensive and of great importance for our knowledge of the use of these rooms (see Chapter 5). Here were found storerooms with their complete inventory, including the various wooden racks and chests. The 19th century excavation reports are our only source of knowledge about the wooden furniture which was being excavated at that time, but the most detailed descriptions from this period also provide an important supplement to our knowledge of the furniture which only later came to light.

On 16 May 1927 an ambitious excavation project began under Amedeo Maiuri (1886-1963). In the period before 1942 (when work was suspended to accommodate the Second World War) the *Insulae* III, IV and V, and the *Insula Orientalis* were exposed in their entirety and the southern half of *Insula* VI was uncovered. After the resumption in 1952, work was extended to part of the *Palaestra* to the Terme Suburbane. This massive operation, which was executed in a relatively short time, could only be financed thanks to the revival of interest in archaeology under the Fascist régime in Italy.⁸⁰ It should also be said that the personal drive of Maiuri himself was of crucial importance.⁸¹

Maiuri has left us a scheme of the periods in which the various houses were excavated during his project. When one compares it to the excavation reports themselves, however, it turns out to contain a number of inaccuracies. For example, work was already in progress on the first floor of the Casa Sannitica in May 1928, whereas Maiuri gives November 1931 for the start of excavations at this site. We have taken the excavation reports to be the more reliable.

A lot of carbonized wood came to light from the very start of this campaign and its importance was recognized by Maiuri in his earliest publications.⁸² Then, following a first visit by journalists to the excavation, a wider public was informed of the wood finds by an article by L. Bottazzi in the *Corriere della Sera*, dated 11-10-1928.⁸³

Registration of the finds and find spots was not always carried out with equal precision during the Maiuri period. This is apparent from the reports relating to the Casa del Bicentenario in 1938-39, where work was proceeding from three sides of the house towards the centre. The reports are often unclear as to workers' precise positions, so that precise find spot cannot be ascertained in

⁷⁹ Ruggiero (1885, 542) mentions this in relation to a chest and (XII/XIII and 592/593) to two other pieces which he refers to as seats, but which should probably be taken as the two beds of a *biclinium*.

⁸⁰ Cf. Manacorda 1982, 444-445.

⁸¹ Maiuri was also thoroughly aware of the scale of his campaign, as is shown by a lecture which he gave before the commencement of the excavations in 1927: (Maiuri 1927, 23; 1954, 362) 'L'attuazione di un tale programma richiede, illustri colleghi, costanza e tenacia, senza farua ansietà di immediati e preziosi ritrovamenti e senza i facili scoramenti che possono venire dalle difficoltà che l'immane impresa deve inevitabilmente affrontare e superare.'

⁸² For example Maiuri 1929, 13: 'E gli scavi per poco ripresi, mostrano già quale e quanto tesoro di nuove cognizioni può venire da Ercolano a completamento di Pompei: i travi, stipiti, intelaiature, armadi, letti, scale, tramezzi restano ancora in gran parte al loro posto con il loro caratteristico aspetto di legno carbonizzato.' Cf. Maiuri 1960, 402: 'Infine all'arredamento della casa Ercolano ha recato un elemento in più, il mobilio in legno. Oltre alle porte, agli armadi, ai larari, ai letti, lavorati a volte con la preziosa tecnica dell'impiallacciatura, alcune mense in legno riproducono, nell'elegante e ardita arcuatura delle zampe e nelle teste dei levrieri che le adornano, le forme e i motivi animalistici delle mense in bronzo, prova di quel magistero dell'arte del legno di cui si avevano più testimonianze letterarie che archeologiche.'

⁸³ My thanks to R. Visser for bringing this article to my attention.

many cases. Fortunately such confusion is not the general rule.

In 1961 Maiuri was succeeded as Soprintendente by A. de Franciscis, with daily direction in the hands of M.G. Cerulli Irelli. The north side of *Insula VI* and part of a high building on the north side of the *Decumanus Maximus* were now opened up.⁸⁴ Cerulli Irelli's excavations added at least four pieces to the stock of preserved furniture. A bed and a table were found in the Collegio degli Augustali⁸⁵ during activities in the north-western part of *Insula VI*, and a bench and chest emerged from the excavations on the *Decumanus Maximus*.⁸⁶ Remains of a wooden chest with glasswork were found in a shop.⁸⁷ De Franciscis (1967, 339 no. 4975) reports the find of wooden furniture to the north of the *Decumanus Maximus*, but gives no further details.

Since the mid-seventies work has been concentrated on the southern side of the town, where the antique beach once lay. No further furniture has been found in the most recent stage of the excavations.

The 20th century excavation reports document the day to day progress of the excavations, give descriptions of the surviving furniture, and often provide information about elements which have since decayed. Although the interpretation of these reports is not always straightforward, even where surviving pieces are concerned, the excavators' notes are often of great value for the reconstruction of the furniture's original form. The descriptions of the furniture often include the main measurements (and sometimes detailed measurements) which was not common practice before 1900. We can gather from the great quantity of furniture mentioned in these reports that it was impossible to conserve all the pieces which were found. In particular, and for reasons which are unclear, many pieces found on the upper floors have been lost. We must assume that some of the material was either too fragile to move or failed to survive the demolition of the floors.

The quality of the descriptions in the 20th century excavation reports varies. Sometimes the notes are very detailed, such as with the couch in the Casa del Mobilio Carbonizzato, the *aedicula* in the Casa del Sacello di Legno and a cupboard.⁸⁸ Sometimes they are much less thorough, such as those describing seven of the beds/couches, a cradle, a table, a bench, an *aedicula*, three racks and four cupboards.⁸⁹ In some instances only the fact of the find is noted, without any further details. This is the case, for example, with the table (cat.no. 15) from the Casa del Mobilio Carbonizzato, found in the same room as one of the couches (cat.no. 7). The paucity of information in the excavation reports here led Maiuri (1958, 260) to a misunderstanding. He describes the table as if the legs were decorated with the heads of greyhounds, which is not the case. Elsewhere too Maiuri has misinterpreted the excavation reports. Nor is this surprising, since the reports are so cryptic and incomplete in places that it is virtually impossible to reconstruct the course of the excavations with any precision. An important example of this involves the Casa del Bicentenario (1937-38). This may also explain why the *aedicula* from the first floor of *Insula V 17* (cat.no. 28) is not described in the excavation reports.

On two occasions Maiuri was tempted into dramatizations which are at odds with the reports. When he describes the cradle (cat.no. 11, figs. 72-80), he mourns the tragic fate of the abandoned child (Maiuri 1958, 345). Yet in the excavation reports covering 23 March to 5 April 1940 we read that six other skeletons were found in the same room. Nor are the various descriptions of the cupboard in the Casa del Bicentenario (cat.no. 39) quite objective. This has to do with the discovery of the 'cross' in the plaster on the wall, which for a long time led people to interpret the

⁸⁴ Cf. Kockel 1986, 524.

⁸⁵ Cat.nos. 10 and 17.

⁸⁶ Cat.nos. 26 and 41.

⁸⁷ One of the pieces of glasswork bears the stamp of P. Gessius Ampliatus, cf. Floriani Squarciapino 1963, 450; Scatozza Höricht 1986, 22.

⁸⁸ Cat.nos. 7, 29 and 39 respectively.

⁸⁹ Beds: cat.nos. 1, 4, 5, 6, 9, 12 and 13; cradle: cat.no. 11; table: cat.no. 19; bench: cat.no. 24; *aedicula*: cat.no. 30; racks: cat.nos. 31, 33 and 34; cupboards: cat.nos. 35, 36, 37 and 38.

cupboard as a Christian altar (figs. 162-163).⁹⁰ In both cases Maiuri seems to have allowed himself to get carried away by his desire to make archaeology dramatic and alive.⁹¹ On other occasions objective information given by Maiuri is dramatized by later writers. We find an example of this in Grant (1971, 32), referring to catalogue number 13 (figs. 87-93): 'At a gem-cutters' shop a sick boy was left lying on an elegantly veneered bed, and beside him was the chicken that had been prepared for his lunch.'

Several of the preserved pieces do not appear at all in the excavation reports, such as the *aedicula* mentioned above, two tables and a stool.⁹² The last of these (figs. 123-126) has always been included amongst the inventory of *Insula Orientalis* II 10, room a, although the finds made in this section are exhaustively described without any mention of a stool. It is therefore very unlikely that the piece was found in this room. In the case of the remains of a couch in the Casa di Nettuno ed Anfitrite (cat.no. 8, fig. 61) the excavation reports site the find in room 7 on the ground floor, whereas Maiuri (1958, 401-402) puts it on the upper floor. Sometimes we just do not know why certain pieces are missing from the reports (as with the pair of couches from the Casa a Graticcio, a table, three table legs, a bench, the pediment of an *aedicula* and a cupboard)⁹³.

Other pieces were discovered in 1931-1932, or after 1943, periods for which no reports can be traced. The find of a table in the Casa del Bel Cortile (V 8, figs. 103-105)⁹⁴ perhaps dates from 1931-1932, while a bed, a table, a bench, an amphora rack and a chest were definitely found in 1960-1961: the first two in the Collegio degli Augustali, the rest during excavations on the *Decumanus Maximus*.⁹⁵

Of all the furniture, only four pieces received an inventory number at the time of their discovery, namely: two tables, an *aedicula* and a chest.⁹⁶ We sometimes find loose fragments being inventorized separately, as in parts of the *aedicula* in the Casa del Salone Nero.⁹⁷ Seven pieces were finally given inventory numbers after being newly restored in the late 1980's: a cradle, three tables, a stool, a bench and a cupboard.⁹⁸ The fact that most of the furniture was not numbered during the excavations is an indication that furniture was treated in the same way as the architecture, wall paintings and floor decorations. In contrast to all other find categories, these four groups fare equally badly in terms of inventory numbers.

2.5 The find spots of the preserved furniture

It is, however, quite possible to unearth the find spots of a number of the preserved pieces from the reports made during the 'nuovi scavi' (fig. 1). Occasionally the excavators succeeded in saving pieces from the upper floors by moving them downstairs. Examples of this are an *aedicula* and a cupboard in *Insula* V 17, the bed from *Insula* V 22 and a bench in the Casa del Sacello di Legno.⁹⁹ Sometimes they were even able to preserve parts of the upper storey and thus the

⁹⁰ In the description of the room in which the cupboard was found he writes (Maiuri 1939, 206): 'Un buon odore di resina come d'incenso, pareva che dovesse esalare ancora intorno al segno della Croce.'

⁹¹ Maiuri (1938, 73) expressed this himself in an obituary for Pirro Marconi: 'Ah se tutti gli archeologi scavatori consacrassero qualche parola di più al gran dramma della scoperta, quanto più viva, più umana, e più compresa sarebbe la nostra fatica.'

⁹² Cat.nos. 28, 16, 18 and 23 respectively.

⁹³ Cat.nos. 2, 3, 14, 20, 21, 22, 25, 27 and 40 respectively.

⁹⁴ Cat.no. 16.

⁹⁵ Cat.nos. 10, 17, 26, 32 and 41 respectively.

⁹⁶ Two tables: (cat.nos. 17 and 19): respectively E 2236 and E 2052, *aedicula* (cat.no. 29): E 1287; chest (cat.no. 41): E 2323.

⁹⁷ *Aedicula* (cat.no. 30): E 1986, 2001, 2005 and 2020.

⁹⁸ Cradle (cat.no. 11): E 3147; tables (cat.nos. 16, 17 and 18): respectively E 3152, E 3149 and E 3150; stool (cat.no. 23): E 3148; bench (cat.no. 26): E 3153; cupboard (cat.no. 40): E 3151.

⁹⁹ Cat.nos. 28, 37, 9 and 24 respectively.

furniture remained in situ. This was the case with three beds and a *biclinium* in the Casa a Graticcio,¹⁰⁰ an *aedicula* and two cupboards in the same house¹⁰¹ and a cupboard in the Casa del Bicentenario.¹⁰² Sometimes the descriptions given are so detailed that they supply additional information about parts which have survived. The *aedicula* from the Casa del Salone Nero (cat.no. 30), for example, probably stood on the first floor but ended up in pieces on the ground floor due to the force of the lava.

Furniture has also survived from the ground floors of various houses and one semi-public building. Thus seven beds/couches were found in ground floor rooms,¹⁰³ while the cradle and a table were found in a household unit situated on a lower terrace under the Casa della Gemma.¹⁰⁴ The tables from the Casa del Mobilio Carbonizzato and the Collegio degli Augustali also came from ground floor rooms,¹⁰⁵ as did a number of storage pieces.¹⁰⁶ In several cases it is not known whether the pieces originally came from the upper or lower floors of a house: examples are the tables from the Casa dell'Atrio a Mosaico, the Casa del Bel Cortile and the Casa dell'Atrio Corinzio.¹⁰⁷ And, as has been said, it is not possible to ascertain the find spot for several others, including three fragments of tables,¹⁰⁸ a stool and a pair of benches,¹⁰⁹ a small cupboard and a chest.¹¹⁰ Of catalogue numbers 26 and 41 we know only that they were found during excavations on the *Decumanus Maximus* during the 1960's.¹¹¹ The dining table with remnants of food, cited by M. Grant (1971, 32) in the Casa del Rilievo di Telefo (*Insula Orientalis* I 2-3), is entirely unknown to us.

2.6 Modern treatment of the furniture: preservation, reconstructions and additions

Whenever wood is found in Herculaneum it is very fragile and only an adequate treatment with preserving material can prevent rapid disintegration. The method used in this century has been the application of paraffin-wax, which gives the carbonized wood sufficient strength to survive above ground.

By great good fortune a new method of treating the carbonized wood had emerged just before the 'nuovi scavi' began in 1927. In the preceding period nobody had succeeded in saving a piece of furniture, nor is there any mention in the excavation reports of experiments to preserve the wood. However, in the first report of the finding of Tutankhamen's tomb in 1922 there appears the following passage about a small wooden chest (Carter/Mace 1923, 165-166): 'Drastic measures were necessary, and after much discussion we decided on the use of melted paraffin-wax. Courage was needed to take the step, but we were thoroughly justified by the result, for the wax penetrated the materials and held everything firm, and, so far from the colours being affected, as we had feared, it seemed to make them more brilliant than before. We used this process later on a number of other objects of wood and gesso, and found it extremely satisfactory.' Perhaps Maiuri or one of his assistants had taken note of this passage and then adapted the method in Herculaneum.

As far as the paraffin-wax treatment is concerned, we have several descriptions from those

¹⁰⁰ Cat.nos. 2, 3, 4 and 5.

¹⁰¹ Cat.nos. 27, 35 and 36.

¹⁰² Cat.no. 39.

¹⁰³ Cat.nos. 1, 6, 7, 8, 10, 12 and 13.

¹⁰⁴ Cat.nos. 11 and 19.

¹⁰⁵ Cat.nos. 15 and 17.

¹⁰⁶ Cat.nos. 29, 31, 32, 33, 34 and 38.

¹⁰⁷ Cat.nos. 14, 16, and 18.

¹⁰⁸ Cat.nos. 20, 21 and 22.

¹⁰⁹ Cat.nos. 23, 25 and 26.

¹¹⁰ Cat.nos. 40 and 41.

¹¹¹ Maiuri (1958, 463) gives the *Insula Orientalis* II 10 as the find spot for the stool. For my objections to this, see above § 2.4.

responsible for applying it. According to Maiuri, mineral oils were added to the paraffin-wax.¹¹² Maggi (1985, 31) claims that a solution of wax and petrol was used. T. Budetta (Budetta/Pagano 1988, 9) calls the liquid a mixture of wax and mineral oils. But according to C. Formicola, who handled the furniture as a wood restorer from the end of the 1950's, neither mineral oils nor petrol had been added by either himself or his predecessors. He tells us that carbon powder was mixed with the paraffin-wax, perhaps to prevent too sharp a contrast in colour between the wax and the black carbonized wood. In many cases the protective layer can still be seen on the surface of the furniture: a thick, black crust, obscuring many details such as the structure of the wood, the marks of carpentry tools and the nature of the joints. Such details can only be seen when the layer is thinly applied or has disappeared over the course of time.

In almost all cases a modern frame was mounted under the remains following the paraffin-wax treatment. For the larger pieces this was made of metal, while for smaller pieces a wooden structure was found to be sufficient. Often the modern elements were also smeared with the wax, which makes it impossible to distinguish them unless the wax layer has crumbled away. Further materials, such as nails, screws, chicken wire, wire and string, have often been added as extra support during or after the first reconstruction.¹¹³ Sometimes missing sections or parts which could not be preserved have been replaced. This could be done either with modern material or with antique wood. Both methods will be discussed below.

Several pieces have been partly reconstructed using modern wood or cement. In the cupboard-*aedicula* in the Casa del Sacello di Legno (cat.no. 29, fig. 139), for example, three quarters of the lower section consists of modern wood.¹¹⁴ In a table from the Collegio degli Augustali (cat.no. 17, figs. 107-109), one entire leg and the lower half of another leg have been made up in cement, the reconstruction being made possible by combining plaster casts of the surviving fragments.¹¹⁵ In both these cases the modern additions are easily recognizable. It is this which makes such practises preferable to the alternative, in which missing parts are replaced using antique, carbonized wood found elsewhere in the excavations. Such wood has had to be treated with paraffin-wax to make it strong enough to saw. The resulting 'modern' elements have then been coated with a further, thick layer of paraffin-wax, just like the authentic parts, rendering the two virtually indistinguishable. It is then only possible to establish that this has been done when the wax layer has worn away and structural differences between the parts become visible. This has happened, amongst other places, in the cradle from the *Insula Orientalis* I 1a (cat.no. 11). In some reconstructions purely modern materials have been used, and in some cases invisibly incorporated into the antique material. In one of the cupboards (cat.no. 37, fig. 159) for example, modern timber has been built in to strengthen the antique wood and only becomes visible when the paraffin-wax layer fragments. In two pieces panels have been strengthened with chicken wire and then smeared with paraffin-wax.¹¹⁶ By contrast, the remains of the couch in the Casa del Mobilio Carbonizzato (cat.no. 7, fig. 58) are encased in transparent plastic which is attached to the couch with modern screws. Although such methods would be currently disapproved of, we should remember that the excavators had no experience in the reconstruction of wooden furniture, nor could they fall back on examples from elsewhere. At the very least, their methods have ensured the survival of furniture which would otherwise have been lost.

¹¹² Maiuri 1958, 22-23: 'Travi, stipiti, porte, intelaiature, armadi, letti, scale e tramezzi restano ancora in gran parte al loro posto con il loro caratteristico aspetto di legno carbonizzato, friabile alla più leggera pressione della mano e facilmente decomponibile all'azione degli agenti atmosferici. Eppure, questo compito è stato assolto sottoponendo il legno carbonizzato ad un razionale trattamento di paraffina e d'oli minerali, che ne assicurassero la conservazione senza alterarne l'aspetto e racchiudendolo entro cristalli ed intelaiature di ferro.'

¹¹³ String binding is very visible in the cradle (cat.no 11); see fig. 75.

¹¹⁴ The details of this are given in cat.no. 29.

¹¹⁵ These additions were removed during the recent reconstruction on plexiglass.

¹¹⁶ Cat.nos. 9 and 37; figs. 62-65 and 159 respectively.

Mistakes in the modern reconstructions are generally confined to details. In cases where misguided alterations have been made to original pieces, they are described in the catalogue under code 3.4.2. One example is a bed (cat.no. 2), where a section of the slatted base has been replaced without allowing for the half-lap joint which must have originally been there (fig. 42).

A good example of the treatment meted out to the Herculaneum furniture during the modern period is provided by the cradle (cat.no. 11). The drawing which Maiuri (1958, 345, fig. 275; given here in fig. 72) includes of the piece gives the impression that the cradle has been extracted from the lava unscathed. In fact the piece was found in fragments, as is apparent from the excavation reports and from the modern reconstruction (which we will discuss further below). Very soon after discovery the fragments were set up on a wooden frame and coated with a thick layer of paraffin-wax, which made details indistinguishable and the whole thing look like a single piece (figs. 73-74).

In 1987 the cradle was given a new restoration by C. Formicola. In the course of dismantling, various of the members turned out to have been assembled from a large number of fragments (figs. 76-77). Indeed several were comprised of elements with quite different structures (i.e. from entirely different types of wood). The explanation was clear. During the earlier reconstruction missing pieces had been replaced with antique wood from elsewhere in Herculaneum. This wood had received the paraffin-wax treatment and then been sawn to size. Original pieces had even been sawn through lengthwise and modern supporting pieces inserted as into a sandwich (figs. 74-75). In the new reconstruction these damaged sections were made whole again. The loss of thickness caused by the sawing was made up with a thicker layer of paraffin-wax. All the elements from the old reconstruction were reincorporated into the new, because it was not always possible to establish which fragments had originally belonged to the cradle and which had been added later. A plexiglass frame was built for the new reconstruction and no more wax was added to the surface of the wood (figs. 78-79). The fragments were glued to the frame using UHU epoxy adhesive. The whole process was thoroughly documented, which was not the case with earlier reconstructions.

The same procedure - replacing the old frame by a plexiglass version and cleaning the wood - was later used for several other pieces: a table, a stool, two benches, an *aedicula* and a cupboard.¹¹⁷ With the exception of a bench (cat.no. 25), all the newly restored pieces were exhibited at the Castel Sant'Angelo in Rome in 1988 and briefly described in the accompanying catalogue (Budetta/Pagano 1988). The advantage of the plexiglass frame is that, because the amount of wax can be reduced to a minimum, all parts of a piece can be easily studied. One slight drawback, however, is that the glue is visible where the plexiglass is attached to the wood. In 1990 a start was made on the new restoration of a couch (cat.no. 13).¹¹⁸ This work was interrupted for a long time following the death of Formicola, but the intention remains to apply these techniques to more pieces in the future.

2.7 The current situation of the furniture: location and state of preservation

Until recently many of the preserved pieces were still standing in the excavated area of the town. Gradually fifteen items, most of them small, were transferred to the site's restoration workshop,¹¹⁹ and three fragments of tables were put in a storeroom in the south-east corner of *Insula VI*.¹²⁰ The rest, mostly larger pieces, are still set up in the houses. Eighteen of them stand

¹¹⁷ Cat.nos. 17, 23, 25, 26, 30 and 40 respectively.

¹¹⁸ The new restorations are also dealt with by Budetta 1987, 199-200; 1989, 267.

¹¹⁹ Namely three beds (cat.nos. 3, 11 and 13), six tables (cat.nos. 14-19), three seats (cat.nos. 23, 25 and 26), an *aedicula* (cat.no. 30), a cupboard (cat.no. 40) and a chest (cat.no. 41).

¹²⁰ Cat.nos. 20, 21 and 22.

in the rooms where they were found,¹²¹ while five pieces are on view in the excavations but not in the rooms where they were found.¹²² Of this last group four have been moved from upper floors to ground floors, no doubt to prevent them from being lost during excavations below them. Probably the only furniture to have been moved upstairs (from the ground floor to a room on the first floor of the same house) are the remains of a couch (cat.no. 8, fig. 61) in the Casa di Nettuno ed Anfitrite. The furniture which still stands in the excavation is exposed to all kinds of damaging influence and the condition of these pieces is therefore deteriorating rapidly. The problems are threefold. Firstly there are environmental factors: the air around Naples is badly polluted and in damp weather smog hangs in the pit of the excavation. The consequences are especially visible in the wall paintings which have suffered badly, but the smog also has a disastrous effect on the furniture. The old layer of paraffin-wax offers inadequate protection against the combined influence of air pollution and wind, and the result is the gradual disintegration of the wood.

Secondly, it is quite impossible to protect all the pieces from touching by tourists who daily visit the town in great numbers. But it should surely be possible to limit the damage by placing them out of reach.

Finally the general condition of Herculaneum has so deteriorated, especially after the 1980 earthquake, that the furniture is threatened by crumbling and leaking ceilings. The earthquake has had such a catastrophic effect that the local authorities have been forced to impose priorities, and it was not until quite recently that the furniture received any attention. The pieces which have suffered worst under this barrage of problems are: the *aedicula* in the Casa del Sacello di Legno (cat.no. 29, fig. 144), which stands under a crumbling and leaking ceiling; the couch in the *Insula Orientalis* II 9 (cat.no. 12, fig. 82), which is very vulnerable to environmental influences; the three pieces which are currently set up in *Insula* V 17,¹²³ and are frequently touched by tourists.

The best solution would probably be to move all the furniture out of the excavations and transfer it to the Magazzino Archeologico, but lack of space and shortage of finance stand in the way. The furniture which has already been brought into the Magazzino is now in a reasonably good and stable condition.

2.8 The representative value of the material

The preserved pieces represent only a fraction of the amount of furniture which must have stood in the houses of Herculaneum at the time of the eruption. However, pieces from every functional category (see Chapter 5) have survived. The extent to which they may be regarded as representative of furniture in the antique town depends on various factors, several of which have already been touched upon.

Firstly, only a quarter of the town's original area has been excavated, and we need to consider whether this part is representative of the town as a whole. The furniture found during the 18th century shaft excavations could have come from anywhere in the whole town, while the preserved pieces all stem from the currently excavated area. Here the only buildings which differ substantially from the rest are the large villas overlooking the sea on the south side of the town, whose size and position clearly place them apart. None of the preserved furniture comes from these villas, however. We are thus confident that the furniture we have is typical of most of the excavated area, and that this area probably reflects the situation in the rest of the town.¹²⁴ This question will

¹²¹ Namely, eight beds (cat.nos. 1, 2, 4, 5, 6, 7, 10 and 12), two *aediculae* (cat.nos. 27 and 29), four racks (cat.nos. 31, 32, 33, 34) and four cupboards (cat.nos. 35, 36, 38 and 39).

¹²² These are two beds (cat.nos. 8 and 9), a bench (cat.no. 24), an *aedicula* (cat.no. 28) and a cupboard (cat.no. 37).

¹²³ Cat.nos. 9, 28 and 37.

¹²⁴ Cf. Guadagno 1993, passim.

return in § 5.4.

Many pieces were of course lost during and after the eruption. One might even say that the force and the heat of the eruption played a key role in selecting the pieces for preservation. Furniture was smashed by the violence or scorched by the heat beyond any hope of recovery. Sometimes the thick layer of lava was porous enough for oxygen to permeate through to the lowest layers of the antique town, and any wood with which it came into contact would thus have been lost.

That any furniture has survived at all is due to the efforts made in the 20th century. The crucial factor here was whether a room had been visited by excavators from previous centuries. We have virtually no information about the nature of the pieces found in the 18th century, but one can conclude from the journals that they turned up in considerable numbers. Apart from a few appliquéés, all these pieces have been totally lost. Of course, before 1927 there was no satisfactory method available for the preservation of the carbonized wood, but even then the crucial factor was the excavator's decision as to whether or not a piece was to be given the treatment. Thus it appears from the excavation reports that pieces of which only small fragments were found were usually not deemed worth preserving. Finally, it must be admitted that even 20th century excavation methods have been responsible for the loss of some furniture and that the current location of several of the preserved pieces may yet have a bearing on their ultimate survival.

Although so many pieces have been lost, it is still possible, by combining the information from various sources, to make general judgements about the wooden furniture which stood in the houses of Herculaneum at the time of the eruption. Summarized briefly, our knowledge is based on the excavation reports (which give descriptions of both the preserved and the lost furniture), on the preserved pieces themselves, on the bronze, iron and bone fittings which have been found, and on the fabric of the houses, which sometimes retain signs of a vanished piece (for example, recesses designed for beds or cupboards). Other finds, such as large quantities of crockery found in one place, argue the existence of a cupboard or chest even if there are no descriptions or remains left to prove it. On the basis of all these data we can arrive at a fair idea of how the houses of Herculaneum were appointed.

It is by now clear that wooden furniture formed part of the arrangements in all the houses, the big villas overlooking the sea as well as the smaller apartments and shops. Seen in this light, the view generally expressed in the archeological literature - that Roman houses were sparsely furnished - is highly misleading. For Herculaneum at least, this view should be adjusted. The data here suggest that many rooms were full of furniture, some of which had both a decorative and a practical function. This conflicts with another current view, that the Romans placed only utilitarian furniture in their houses. We will discuss how these unsatisfactory ideas can be further qualified when we address the function of the furniture in Chapter 5.

2.9 Conclusion

The nature of the eruption as it effected Herculaneum created conditions which were favourable to the preservation of wooden furniture, in spite (and probably because) of the fact that the wood was carbonized by the heat. Carbonized wooden furniture was encountered from the very start of excavations, but the value placed upon it differed enormously in the 18th, 19th and 20th centuries. In the 18th century interest was limited to finds which were considered aesthetically pleasing, which at that time did not include the wooden furniture. In the 19th century, descriptions were made of the wooden contents of the houses but there was not yet a method for preserving objects made of organic material. Only in the 20th century do we find both thorough descriptions of this category of find and actual examples of wooden furniture adequately preserved.

Since 1927, 41 pieces of furniture have wholly or partly survived. That a piece can still be

seen depends on a number of factors. Treatment with paraffin-wax (perhaps derived from H. Carter's and A.C. Mace's successful experiment with this method of preservation on a small chest from the tomb of Tutankhamen) made the wood strong enough to cope with its new surroundings above ground. A supporting frame was required for almost every piece and missing elements were sometimes supplied from modern materials. In recent years many pieces have been moved from the excavations to the Magazzino Archeologico, but those items which still stand in the excavations are subject to damaging influences from the environment and from tourism.

Apart from the wooden furniture itself, the excavation reports are also important in providing a wealth of information about its original form and probable find spot. They include remarks about the form of the furniture, the techniques used to make it and the context in which it was found. They also pose problems for the reader. Sometimes, for example, it is just not possible to determine a find spot accurately. This might be due to a gap in the records (the years 1931-1932 for example) or to an occasional lapse in method (the Casa del Bicentenario).

The preserved pieces of wooden furniture and the remains of fittings in other materials, taken in combination with information contained in the excavation reports and with evidence of furniture left in the structure and decoration of the houses, nonetheless provide a representative picture of the furniture which stood in the houses of Herculaneum in the year 79 A.D.

CHAPTER 3

FORM

3.1 Introduction

Many of the wooden pieces in Herculaneum represent the only known examples of particular types of Roman furniture. This immediately raises the question of whether such pieces were unique or more widely available. This chapter will attempt to provide some answers. The main criteria in the typology presented here will be form and construction. In spite of the similarities encountered within the main categories, we find a great variety in structural and decorative details. Thus within a limited number of categories there are many possible variations. We will also compare our typology with that generally used for wooden furniture from the rest of the Roman Empire. In some cases, the Herculaneum excavation reports will be used as a source of information about the form of individual pieces which have been lost.

The comparative material falls under four headings. Firstly there are wooden pieces from other Roman sites. Secondly there are the casts from Pompeii and Boscoreale. Thirdly we have original pieces in materials other than wood. And finally there are depictions which echo the various forms which have survived in the original in Herculaneum. This last source is particularly interesting, since in spite of the paucity of direct wooden parallels, the Herculaneum forms are often represented on other objects. In particular, grave reliefs provide important evidence of the distribution of specific types of furniture. Besides these archaeological sources, the written sources provide further information about form and the Latin terminology. The chapter begins with beds and couches (§ 3.2), followed by tables (§ 3.3), seating (§ 3.4) and storage furniture (§ 3.5). We then discuss the library of the Villa dei Papiri (§ 3.6) and end by examining various formal similarities which appear in the Herculaneum material (§ 3.7).

3.2 Beds and couches

The beds and couches of Herculaneum can be divided into three main groups according to form: beds/couches with boards (8), *biclinia* (2) and children's beds (2).¹²⁵ One couch (cat.no. 8; fig. 61) is too fragmented for the original form to be determined. There is also indirect evidence of a fourth group, in the form of the bronze appliqué which once decorated its *fulcra*. However, since no wooden remains of this type have survived in Herculaneum, it is not dealt with in this chapter (for this group see § 4.7.1).

Virtually nothing has been found in the way of bedding, although leaves and some remnants of textile from the mattress were left in the cradle (cat.no. 11). Such matters fall outside the scope of this study, however, and are only mentioned in passing.¹²⁶

3.2.1 Beds/couches with boards

Most of the beds found in Herculaneum are of the same type, their most striking feature being the high boards mounted on two or three sides of the bedframe (the front always excepted).

¹²⁵ Beds with boards: cat.nos. 1, 2, 3, 7, 9, 10, 12 and 13; *biclinia*: cat.nos. 5 and 6; children's beds: cat.nos. 4 and 11.

¹²⁶ In the cast of a bedframe from the Casa di Cerere in Pompeii (see appendix 3) we can see the impression of the mattress (figs. 186-188 and 201 A). For bedding in general, see: Graillot 1919; Ransom 1905, 66-71; Richter 1926, 135; Herzog-Hauser 1937, 1723-1725 and 1937A, 1807-1808; Liversidge 1955, 57-64; Richter 1966, 117-120; Grodde 1989, 153-154.

In this study we will refer to such pieces as 'beds with boards'.¹²⁷ The Latin term used for these boards was *pluteus*.¹²⁸

Such beds stood on four legs which were formed on the lathe. These consisted of a metal rod, the core of the leg, over which wooden rings, each separately turned, were threaded like large beads. In one of the beds (cat.no. 1, in the Casa del Tramezzo di Legno, figs. 34-35), the wooden rings had a bronze casing. In this example, the bases of the legs are linked in pairs by stretchers at each end. Unfortunately these are the only legs whose bases have survived in the original and we therefore cannot be sure whether or not similar stretchers were fitted to legs which did not have a bronze casing.¹²⁹ The four legs support the rectangular bedframe, which was constructed from four rails joined at the corners with mortise-and-tenon joints.¹³⁰

The high boards mounted along the top edges of this frame were probably designed to provide protection against cold and damp.¹³¹ Cushions would have rested against one of the end-boards. A structural moulding was often fitted in the angle between the bedframe and the boards.¹³² In one couch this moulding is part of the board (cat.no. 12; figs. 81, 85-86), while in the others it is a separate element. Boards and moulding are generally let into the bedframe in order to strengthen the construction.

Into the bedframe was fitted one of several constructions designed to carry the mattress. The strongest of these resembles the modern slatted base: a system of intersecting slats, equally spaced, are fitted into the rails of the bedframe (we will refer to this construction as Grid A). Half-lap joints are used at the intersections, and mortise-and-tenon joints at the ends of the slats. Substantial remnants of this kind of 'slatted base' have survived in two beds (cat.nos. 1 and 2; figs. 33, 35, 37, 38), while evidence of its presence can also be seen in a third, the bed in the Collegio degli Augustali (cat.no. 10, figs. 67, 70-71). Outside Herculaneum there is a slatted base with a central support from Roman Egypt, now in the Royal Ontario Museum in Toronto.¹³³

In beds without such a grid the mattress was probably carried by intersecting straps made of leather, fabric or rope, attached to the bedframe. Although nothing of it has survived, the excavation reports describe a strapping of this kind used in the couch from the Casa del Mobilio Carbonizzato (cat.no. 7; figs. 58).¹³⁴ The other beds may well have been similarly equipped. Indeed, such a construction has been established for a bed from the Casa dei Due Atri, now lost.¹³⁵ In this case quite broad straps of fabric are involved (c 20 cm.), stretched four times across the width of the bed. It must be said, however, that in Herculaneum we find no sign of these straps being fixed to the bedframe, nor of wear caused by rubbing.¹³⁶

¹²⁷ The designation 'beds with boards' is chosen partly because of the conspicuous boards and partly to distinguish this type from 'beds with *fulcrum*', which had an elevation on one end only.

¹²⁸ Fest., 258 L.; Isid., Orig. 20.11.5: *Sponda autem exterior pars lecti, pluteus interior* (*Sponda* is more the outer part of a bed, *pluteus* more the inner part.); Mart. 3.91.7-10; id. 8.44.13; Paul., Fest. 259 L; Prop. 4.8.68.

¹²⁹ This construction does appear frequently in the couches which stood in dining rooms (*lecti tricliniales*, of the 'beds with *fulcrum*' type) whose legs had the same form as those in the bed from the Casa del Tramezzo di Legno (see § 4.7.1).

¹³⁰ For illustrations of bedframes see below, figs. 33, 35, 37-38, 46-47, 58-59, 64, 66-67, 81-82, 88-89.

¹³¹ See figs. 33, 35, 37, 58, 62, 82, 89.

¹³² See figs. 37-38, 58-59, 62, 64, 67, 71, 87-88, 92.

¹³³ Acc.No. 910.27, cf. Needler 1963, 1-2.

¹³⁴ They say of this bed: 'Sopra il reticolato di legno poggia un reticolato fatto di corda e nastro', cf. appendix 1: 9 March 1933.

¹³⁵ Found on 18-12-1939 in room 3 on the ground floor. See appendix 1.

¹³⁶ Examples of this system are: a bronze bed from the Regolini-Galassi tomb at Cerveteri, which imitates the strapping in bronze, and two beds which are depicted in the tomb of Vestorius Priscus at Pompeii. For the bed in the Regolini-Galassi tomb, see Pareti 1947, 285 and tav. XXX no. 236, now in the Museo Gregoriano Etrusco of the Vatican Museums, inv. 559; the network consists of 29 straps strung in two directions and attached to the frame with nails (the raised head of this bed is an inaccurate reconstruction, conceived by Pareti; it originally formed part of a *biga*, cf. Emiliozzi Morandi 1992, 106 and fig. 23). For the two beds depicted in the tomb of C. Vestorius Priscus in Pompeii, see Spano 1943, 273 fig. 9 and Mols/Moormann 1996. These beds have four turned wooden legs which support a rectangular bedframe. The mattress is carried by a network of intersecting straps which run diagonally across the bedframe forming a diamond pattern. This kind of

While the mattress support within the bedframe can vary in form, all the beds are strengthened in a very similar manner: two members (stretchers) are fitted across the bedframe, parallel to the ends and usually below the frame.¹³⁷ These are then linked by further members (ties) running lengthwise. (We will refer to this construction as Grid B.) In the couch from the Casa del Mobilio Carbonizzato (cat.no. 7) and in a plaster cast from the Casa di Cerere in Pompeii (I 9, 13), four undecorated auxiliary legs (cylindrical and rectangular respectively) are installed to lend greater strength at the points where Grid B meets the bedframe.¹³⁸ The fact that in many cases Grid B was attached to the underside of the bedframe with half-lap joints leads one to suspect that more beds must have had auxiliary legs of this kind. We find such legs on the bed in the klinè monument found at the Via Portuense in Rome in 1949, which suggests that similar constructions were in use outside Campania.¹³⁹ As an alternative to auxiliary legs, Grid B could be glued tight to Grid A, if this last was present. In other cases the Grid B construction would have given the bedframe sufficient strength to carry a strapping, which generally had to be more than two metres in length. In two beds Grid B is incorporated into the same plane as the bedframe, mortise-and-tenon joints being used (cat.no. 9, fig. 64 F and cat.no. 12, figs. 81-82). Auxiliary legs may not have been needed in such a construction.¹⁴⁰

The term used for the bedframe in the written sources is *sponda*.¹⁴¹ However, the same term is also used to refer to the open side of the bed,¹⁴² and even as *pars pro toto* for the whole bed.¹⁴³

When we look at the dimensions of the eight 'beds with boards', we find that the length (when fully preserved) varies between 2.04 and 2.22 metres (c 7-7½') and the width between

strapping for beds has a very long history. Schaeffer/Andrae (1942, 202), for example, show an Egyptian bed now in the Staatliche Museen in Berlin (Inv. 9592). The bedframe has holes for the straps, which themselves have disappeared. Laser (1968, 19-31 and Abb. 2, 4, 5) observes a similar strapping in beds depicted on Greek geometric vases. Sometimes the straps are difficult to recognise because in the painted tradition they have become a purely decorative device. Holes for such straps are found in a Greek bed from the 5th century B.C., found at Duvanli (Losarskata Mogila, Bulgaria) in 1931, published by Filow (1934, 119-126 and Abb. 145-150). See also Salonen 1963, 109, Nr. 1-5 and Abb. XVI-XIX: clay models of beds from Ur (Larsa period), where the frame is probably stretched with leather straps, either close woven or in a wider net (British Museum inv. U 127500, U 116506, U 12497, U 113181); Bongioanni 1987, 108 fig. 138: rope net in Kha's bed from Deir el Medina, Torino, Museo Egizio, inv. suppl. 8372; Marinatos 1971, 41-42 and pl. 36, 104, 105: reconstruction of a bed in Thera, where a central animal skin is held by straps attached to the bedframe, cf. Kobeck 1983, 193 and figs. 44-45; Wasowicz 1964A, 186 fig. 13, 187 figs. 14, 188; Säflund 1981, 55: funerary bed from Paestum dating from c 510 B.C. with an iron net imitating leather straps; Fuchs 1963, 31 and Taf. 55. We also find evidence for strapping in Roman literature. The terms used are: *fascia* (*fascea*), *instita* and *lorum*: Ambrosius, Cain et Abel 1.4.14: *Institis texui lectum meum et tapetis ab Aegypto stravi* (I have woven my bed with straps and spread it with covers from Egypt.); id. Apologia David altera 3.14; Cato, Agr. 10: *Lectos loris subtentos* (Beds stretched with straps.); Cic., Div. 2.134: *Fascea lecti sui cubicularis* (The strap of his cubiculum bed.); Didascalia Apostolorum 5.20; Hieronymus, in Osee 14.15 (p. 938a); Mart. 5.62.5-6: *Nulla tegit fractos - nec inanis - culcita lectos, | putris et abrupta fascia reste iacet*. (No mattress - not even an empty one - covers the broken bed, / a filthy strap hangs down now that the rope is severed.); Petr. 97: *Imperavi Gitoni, ut raptim grabatum subiret annexereturque pedes et manus institis* (I ordered Giton to creep quickly under the bed and to stick his feet and hands in the straps.); cf. also Ransom 1905, 62-66.

¹³⁷ Cat.nos. 1, 2, 4, 7, 13; see figs. 35, 38, 46-47, 59, 60, 88.

¹³⁸ In the case of the bed in the Casa del Mobilio Carbonizzato this is apparent from the excavation reports dated 9 March 1933. The rectangular auxiliary legs in the bed in the Casa di Cerere at Pompeii are partly visible in the cast (figs. 188, 201 A; for this last bed see also appendix 3). A further auxiliary leg was encountered in Herculaneum in a bed which is now lost: see appendix 1: 9-1-1929.

¹³⁹ The piece is in the Museo Nazionale delle Terme in Rome, inv. 125.605, and is dated in the late-Flavian or early-Trajanic period, cf. Facenna 1949-1950, 215-216 and tav. I; Berczelly 1978, 50-51 fig. 1 and pl. IIb and XIa; Giuliano 1985, 472-476 no. IX 3. A klinè monument is a sarcophagus whose lid is sculpted in the form of a bed upon which lies an effigy of the deceased.

¹⁴⁰ The variants of Grid B (apart from the positioning within or under the frame) are not important here. They are described in the catalogue.

¹⁴¹ Ov., Met. 8.656; Petr. 97.

¹⁴² Isid., Orig. 20.11.5; Mart. 1.92.5; id. 3.91.5-10; id. 11.56.4; Ov., Fast. 2.345.

¹⁴³ Hor., Epod. 3.21; Mart. 14.85; Ov., Am. 3.14.26; Verg., A. 1.697-701.

1.06 and 1.25 metres (c 3½-4'). Outside Herculaneum we know the dimensions of only one other bed, that found in the Villa di Contrada Pisanella in Boscoreale (2.20 x 1.40 m).¹⁴⁴ All these examples are bigger than a modern single bed. One example from Herculaneum, which is only known from an extensive description, must have been exceptionally large, measuring 2.45 x 1.44 m.¹⁴⁵ Widths in excess of 1.10 m raises various questions about the use of such beds. These are addressed in Chapter 5. The surprising length can be explained by the thickness of the cushions which were placed on them, as be seen on various depictions. At the head of the bed we see the mattress (which is often shown as longer than the bedframe) rolled back on itself and topped by a cushion. We find this arrangement on a small terracotta relief from the Casa dell'Efebo at Pompeii, on several klinè sarcophagi and on reliefs with depictions of bodies lying in state.¹⁴⁶ In both Herculaneum and Pompeii niches are often cut out of the walls to make more room for a bed. Examples in Herculaneum are room 3 of the Casa Sannitica (V 1) and rooms 3 and 4 of the Casa del Mobilio Carbonizzato (V 5). Two observations can be made based on these niches. Firstly, that the practice was designed to prevent adjoining rooms becoming much smaller; in the *atrium* of the Casa Sannitica, for example, a whole wall would otherwise have had to be moved to accomodate a bed, making the *atrium* somewhat smaller. And secondly, that the construction of niches suggests that furniture was being taken into account when the room was built. This in turn suggests that beds (at least) were made to a more or less standard length.¹⁴⁷ The average dimensions are about 2.15 m. long by 1.15 m. wide (c 7½' x 4').

Variations within the 'bed with boards' type mainly involve the form and decoration of the boards. There are, for example, completely vertical boards (cat.nos. 1 and 2; figs. 33 and 39), while some headboards can be set at an angle of 135° to the frame, a comfortable position to support a head cushion (cat.no. 9; fig. 65). Ransom (1905, 36 and plate XXVIII and figs. 19-20) has observed that depictions of 'beds with boards' often show a horizontal division in the boards, with the lower part set at an angle and the upper part either curved or vertical.¹⁴⁸ In Herculaneum, the couch in the Casa del Mobilio Carbonizzato and that in the *Insula Orientalis* II 10 are actual examples of this variant (cat.nos. 7 and 13; figs. 58-59, 88 and 91). In these couches a curved lower section supports a vertical upper section. We also find very close resemblances in the cast in the Casa di Pinarius Cerealis in Pompeii (III 4 b; figs. 196-197 and 201 E-F) and in the very detailed depiction of a bed inside the Simpelveld sarcophagus (fig. 10).¹⁴⁹

We find variations in the decoration as well as in the form of the boards. Some boards have

¹⁴⁴ Cf. Pasqui 1897, 476-477.

¹⁴⁵ See appendix 1: 5-12-1928.

¹⁴⁶ Relief Casa dell'Efebo: NSc 1929, 371 fig. 9 and 372. Klinè sarcophagi: Altmann 1902, 31-42; Wrede 1977, 402 Abb. 75: Rome, Museo Nazionale delle Terme, inv. 114906; Giuliano 1981, 167-168, no. II 58: Rome, Museo Nazionale delle Terme inv. 125829; Giuliano 1981, 177-178, no. II 64: Rome, Museo Nazionale delle Terme inv. 61586; Koch/Sichtermann 1982, Abb. 61. On the sarcophagus from Melfi there are even two cushions lying on the bed: cf. Delbrück 1913, 281, Abb. 3/4 and 283; Stročka 1984A, 229-231, and Abb. 27-30. Child's sarcophagus, Agrigento: De Miro/Fiorentini 1976-1977, 426-427 and tav. XXII, figs. 1-3; Valbruzzi 1991, tav. 70-73; Amedick 1991, Taf. 53. Reliefs with bodies lying in state: several examples in the Capitoline Museums in Rome: Stuart-Jones 1912, 50-51, pl. 10 nr. II 7; id. 61, pl. 11 nr. 28; id. 72-73, pl. 15 nr. II 2; Amedick 1991, Taf. 57, 1-2. Likewise, a very thick mattress and a large cushion lie on two funerary beds which are depicted on the grave monument of the Haterii in the Museo Gregoriano Profano of the Vatican Museums, cf. Richter 1966, figs. 550 and 663.

¹⁴⁷ See the comment of Peterse (1993, 9) about the functional sizes of *cubicula* situated around the *atrium* in the Casa del Labirinto in Pompeii (VI 11, 9-10).

¹⁴⁸ Cf. Liversidge 1955, 7.

¹⁴⁹ For the cast in the Casa di Pinarius Cerealis see appendix 3 and for the bed in the Simpelveld sarcophagus cf. Holwerda 1931, 28-29, id. 1932, 58-62 and Stuart 1986, 44 and fig. IV. See also, the right-hand board of the bed depicted on the Medea sarcophagus in Basle, cf. Schmidt 1969, 27 Taf. 14 and 17,2; the klinè monument of Iulia Attica in the Museo Nazionale delle Terme in Rome (inv. 39.501), cf. Wrede 1977, 404 and 405 Abb. 78; the klinè monument of Flavius Agricola, Indianapolis Museum of Art (inv. 1972.148), cf. Wrede 1981, 102 and Abb. 19. See also Faust 1992, 107.

no panelling or decoration (cat.no. 1, 2; figs. 33, 37), others are comprised of panels fitted into a frame (cat.no. 9; figs. 62-65) and still others carry a veneered wood mosaic (cat.no. 13; figs. 87-93).¹⁵⁰ Beyond Herculaneum, original examples and depictions of such boards reveal a wide range of decorative possibilities, employing similar, but never identical, decorative schemes.¹⁵¹ Since most beds fitted closely between the walls, only the insides of the boards were visible. The outsides were thus usually left undecorated. There is no evidence for boards being covered with fabric or leather, such as Liversidge (1955, 9-10) and Richter (1966, 109 and figs. 558-559) have suggested for an Egyptian terracotta bed now in Berlin.¹⁵² However curved the boards of this bed may appear, they show an ordinary panel construction. A similar suggestion has been made for a couple of the beds in Herculaneum (cat.nos. 7 and 9),¹⁵³ but here too it is mistaken. In both examples only wood is involved.

Differences in the mattress support and in the form and decoration of the boards are no reason to introduce a set of sub-types; they can all be regarded as variations on a single theme.

The study of 'beds with boards' was pioneered by Ransom (1905, 33-35) on the basis of depictions. She defined them as typical of the late-Roman period and dated their appearance to the second half of the 1st century A.D., when they would have supplanted the 'bed with *fulcrum*'.¹⁵⁴ Ransom (1905, 34) also drew attention to a second feature of these beds, the turned legs, which are 'comparatively low and never extend above the level of the frame' (fig. 3). In her view the cumulative effect of variously shaped wooden rings was to create 'ugly patterns', with the legs very narrow relative to the heavy superstructure. (Rodenwaldt, on the other hand, considers that the bed only now becomes an organic unity.¹⁵⁵ Perhaps the stress here lies above the bedframe.) Ransom's date for the appearance of this type of bed is understandable, given that the form appears on many funerary reliefs from the end of the 1st century A.D..¹⁵⁶ However, a wide variety of detail is already apparent on the earliest of the gravestones to which she refers. This would seem to indicate that its appearance should be sought before the Flavian period. G.M.A. Richter (192, 133-134; 1966, 105 and 109) and B. Barr-Sharr (1987, 8) also place the transition at the end of the 1st century A.D.. None of them apparently consider a period during which the two types may have coexisted. J. Liversidge (1955, 7) and S. Faust (1989, 27-28 and 58-59) are more cautious and date the emergence of the new type to the early Empire, but all agree that the new form developed out of the 'bed with *fulcrum*'. There are three monuments, however, which suggest an earlier arrival on

¹⁵⁰ The word used by cabinetmakers for this type of veneer is 'marquetry', a term derived from the French. For clarity's sake, the term 'wood mosaic' is used here, although we are not talking about a real mosaic, in the sense of a pattern created by different coloured pieces. Here the various elements of the decoration all come from one type of wood, the grain being juxtaposed to create a pattern.

¹⁵¹ Examples in Pompeii (see also appendix 3): casts of two beds in the Casa del Sacello Iliaco (I 6, 4; figs. 177-179 and 200 A), one of whose boards has a decoration of rectangles in strips of bone and the other two rows of panels; the bed in the Casa di Pinarius Cerealis in Pompeii (III 4 b; figs. 196-197 and 201 E-F). Overbeck/Mau 1884 (324 fig. 25) give a board with panel decoration which we have not been able to trace. Further, in the Villa di Contrada Pisanella in Boscoreale (cf. Pasqui 1897, 446 fig. 54, 447) a bed was found with curved boards on both sides. A bed from the Casa del Menandro in Pompeii (I 10, 4) which has not survived had boards fixed to an iron frame. They were painted red and had bone appliqué (Maiuri 1932A, 210). The bed in the Simpelteld sarcophagus has a panelled back board; the side boards carry a meander motif. At the time of the find of a bed on the first floor of the Casa dello Scheletro in Herculaneum (17-2-1871, see appendix 1) it was recorded that the boards had a carved egg-and-tongue moulding ('intagliata con ovoli') and in another bed from Herculaneum (found on 16-5-1933, see appendix 1) the boards seem to have been decorated in geometric patterns executed in red paint.

¹⁵² The bed is part of the collection of Staatliche Museen, inv. 13166.

¹⁵³ Faust 1989, 107, 173-174, Kat. 126-127.

¹⁵⁴ By 'late-Roman' Ransom meant 'from the Flavian period onwards'. To prevent confusion it is better to qualify this dating a little.

¹⁵⁵ Cf. Rodenwaldt 1921, 1860. Richter (1966, 109) describes the legs as follows: 'The turnings in the legs of these couches are of various design, some heavy, others more graceful.' See also Faust 1989, 28: 'Beinform (7)'.

¹⁵⁶ See for example Liversidge 1955, 21-25 and figs. 13-17 and Ransom 1905, plate XXVIII, who show a lead relief with a depiction of such a bed. Other depictions of 'beds with boards' appear on painted gravestones in the form of *aediculae* from Marsala (cf. Gabrici 1929, tav. I-IV), dating: 1st century A.D..

the scene. One is the klinè monument of Bathyllus in the Palazzo dei Conservatori in Rome (inv. 1999), which has three boards and the 'ugly patterns' legs. H. Wrede (1977, 400 and 401 Abb. 73-74) places the piece in the time of Claudius or Nero (41-68 A.D.), and thus earlier than Ransom's estimate. Secondly there is the grave relief of Ti. Claudius Dionysius in the Vatican's Museo Gregoriano Profano (sez. 7, inv. 9830), which F. Sinn (1991, 32-33 and 152 Abb. 28-29) regards as early Claudian (c 45 A.D.). This bed also has continuous panelled boards on three sides. Thirdly, and earlier still, is the klinè monument in the Museo Nazionale delle Terme in Rome which can be dated to the middle or late Augustan period (c 15 B.C.-15 A.D.).¹⁵⁷ Faust sees this monument as reason enough to place the transmutation of *fulcra* into boards in the early Imperial period. As a transitional step she cites the so-called 'Kompositfulcra' (Faust 1989, 57-60). She notes a resemblance between the steep S-shaped bend of the late *fulcra* ('Fulcrumform IV') and the boards of the couch in the Casa del Mobilio Carbonizzato (cat.no. 7; figs. 58-59). In our view what we are seeing here is the influence of 'Fulcrumform IV' on an existing type of bed. Thus although by the end of the 1st century A.D. 'beds with *fulcrum*' have been almost completely superseded by 'beds with boards', the form of the boards still reveals the influence of the earlier tradition. Many beds depicted on gravestones from the 2nd century A.D. have the same curved form found in the couch from the Casa del Mobilio Carbonizzato and in that from the *Insula Orientalis* II 10 (cat.no. 13; figs. 88-93) in Herculaneum.

In terms of form, all Herculaneum's 'beds with boards' can be included in Ransom's category. The only example with 'ugly patterns' legs which is still *in situ* is the bed in the Collegio degli Augustali (cat.no. 10; figs. 67 G, 68). However, the excavation reports allow us to conclude that other pieces, such as the couch in the Casa del Mobilio Carbonizzato (cat.no. 7) were also supported on similar legs. Finally, various loose finds of turned wooden bed legs confirm the presence of these 'ugly patterns' legs in Herculaneum.¹⁵⁸ Apart from the iron rod, they were probably made entirely of wood and no original examples are known from elsewhere. By contrast, many fragments of the more expensive standardized leg with bronze casing have survived from the Roman period. This type of leg has a Hellenistic origin (fig. 2 right; see § 4.7.1.) and its manufacture must have been very labour intensive. It is generally found on 'beds with *fulcrum*' (fig. 26; for this type, see § 4.7.1), but occurs twice in Herculaneum in combination with wood: in the couch in the Casa di Nettuno ed Anfitrite (cat.no. 8; fig. 61) and in the bed in the Casa del Tramezzo di Legno (cat.no. 1; fig. 34). Both depictions and finds suggest that legs with a bronze casing were generally associated with the more expensive bed or couch, such as those which graced the *triclinium*. According to Ransom, these legs fell out of fashion with the '*fulcrum*' and a taste for 'ugly patterns' legs prevailed from the middle of the 1st century A.D.. The bed in the Casa del Tramezzo di Legno, which contains various bronze elements, should be regarded as an expensive 'bed with boards' endowed with features borrowed from 'beds with *fulcrum*'. Faust (1989, 153) is surely right in contending that the bronze appliqués carried by *fulcra* were not transferred to the boards, even in altered form. It was the front of the boards which were decorated, rather than the sides.

The fact that 'beds with boards' occur in such great variety in Herculaneum (allied to the large number of surviving depictions) make it very likely that the type is older than even Liversidge and Faust have assumed. We are now able to see resemblances between Ransom's

¹⁵⁷ Cf. Wrede 1977, 402 and Faust 1989, 55-56 Abb. 29.2.

¹⁵⁸ Examples of the 'ugly patterns' type which are preserved in the Magazzino Archeologico at Herculaneum: inv. E 76 (see appendix 1, 26-10-1927); inv. E 255 (see appendix 1, 10-5-1928). We have been unable to trace one leg, published by Mutz (1972, 166-167 and Abb. 487-490). The same is true for two legs which were once displayed in a case in the *Insula Orientalis* II 5 and which are mentioned by Boube-Piccot (1975, 15 and 16 note 52: 'sans doute du pin!' and 374, no. 78). The legs of the couch in the Casa del Mobilio Carbonizzato have also disappeared. Pasqui (1897, 476) gives an example from Boscoreale; an example from Pompeii is the bed in the Casa del Fabbro (I 10, 7; see appendix 3).

'ugly patterns' leg type (fig. 3) and the legs of some Classical Greek beds, which have been extensively studied by H. Kyrieleis (1969, 116-151). The relevant comparison is with his leg type A (fig. 2, left), which was produced on the lathe, and may have survived longer in *Magna Graecia* than on the mainland of Greece. If so, it could well have been the model for the 'ugly patterns' Roman type. This would suggest that the Hellenistic-Roman 'bed with *fulcrum*' was not directly replaced by a 'new' type with boards, but that both existed for a time alongside each other. In the process one absorbed both formal and functional aspects of the other. Not only does the horizontal division found in several of the Herculaneum boards (and in a number of depictions) derive from the Hellenistic 'bed with *fulcrum*', but both were used to recline on whilst eating. As 'beds with *fulcrum*' gradually fell out of fashion during the 1st century A.D., their function as dining furniture was assumed by 'beds with boards'. In a later period the older curved form reappears on grave reliefs and sarcophagi, the front side usually having the form of a dolphin.¹⁵⁹

Exactly when boards came into vogue is not known, and neither is their precise origin. None of the Greek beds known to us has boards. However, the striking variety in the boards found in the towns around Vesuvius strongly suggests a long prior history. The form may have been taken over from central Italy, perhaps from Etruria. A Celtic claim is lodged by a bed with boards dating from the middle of the 6th century B.C.. The bier in the grave of the 'Keltenfürst von Hochdorf', now in the Württembergisches Landesmuseum in Stuttgart, has a raised board mounted along three sides of the bedframe.¹⁶⁰ It is made of bronze but certainly goes back to wooden examples.¹⁶¹ J. Biel (1985, 98) compares this unique piece with Etruscan *thronoi* (thrones), which were covered with metal leaf. These carried cinerary urns and appear as early as the 7th century B.C.. The most important parallel he draws is with the *thronos* from the Tomba Barberini in Praeneste, now in the Villa Giulia in Rome. A late form of the same type is the famous Corsini throne in the Palazzo Corsini in Rome.¹⁶² The assumption of a formal relation is quite justified and would point to a central Italic influence in the development of boards, both on the bed from Hochdorf and on later Roman beds. A yet stronger pointer to central Italic influence is provided by a depiction on the Certosa *situla* in Bologna, which shows a bed with a raised back upon which two musicians are seated. Steingraber (1979, 87) classified the bed depicted here as 'Klinentyp 2S', which dates from the 5th century B.C..¹⁶³

Various words are used for beds and couches in the written sources. The usual term is *lectus* or *lectulus*.¹⁶⁴ This is sometimes qualified by an adjective, such as *cubicularis*,¹⁶⁵ *tricliniaris*,¹⁶⁶ *deliacus*,¹⁶⁷ or *punicanus*.¹⁶⁸ Besides these we also find the term *grabatus*

¹⁵⁹ Liversidge 1955, 6, gives examples; cf. Faust 1989, 62.

¹⁶⁰ The bier is described at length by Biel 1985, 92-113; Planck/Biel 1986, 99-105 and 146-147.

¹⁶¹ Cf. Grodde 1989, 111.

¹⁶² Galleria Nazionale (Palazzo Corsini) inv. 666, cf. De Luca 1976 I, 93-100, cat. 54 and II tav. LXXXI-LXXXV; Bonfante 1977 and 1981; Torelli 1990. Jurgit (1990, 21) also draws a comparison between Etruscan thrones and the Hochdorf bed: 'Zumindest in der Form der Lehne und deren Ornamentierung geht es auf italische Beispiele zurück.' For the Etruscan thrones, see also Richter 1966, 85-86 and figs. 427-431 and 434; Mackintosh 1974, 21-24; Steingraber 1979, 23-25: 'Typus I a-b'.

¹⁶³ The *situla* comes from tomb 68 of the Necropoli della Certosa and is now in the Museo Civico in Bologna: cf. Steingraber 1979, 276 Kat. 428; Planck/Biel 1986, 99 Abb. 16. Other examples of 'Klinentyp 2S' are depicted in a *symplegma* scene on a *situla* fragment from Sanzeno, now in the Museum Ferdinandeum at Innsbruck, inv. 16700 (Steingraber 1979, 276 Kat. 431; Grodde 1989, 98 and Abb. 52a) and on a mirror found in a grave in Castelvetro di Modena, now in the Galleria Estense in Modena (Steingraber 1979, 277 Kat. 434).

¹⁶⁴ Both terms appear so often that one is best referred to the Thesaurus Linguae Latinae and to other lexicons. See also § 5.5.1 below.

¹⁶⁵ Cic., Div. 2.134; Cic., Tusc. 5.59; Rut. Lup. 2.7; SHA (Lampridius) Heliogabalus 20.4; V.Max. 9.13.ext.4.; Var., L. 8.32.

¹⁶⁶ Acta Arvalia a. post Chr. 218; Hyg., Fab. 274.1; SHA (Lampridius) Heliogabalus 20.4; Var., L. 8.32.

or *grabatulus*.¹⁶⁹ In the present context we would like to examine three of these terms, *lectus cubicularis*, *lectus tricliniaris* and *grabatus*, all of which appear in Varro's *de Lingua Latina* 8.32:

Quo nomine et gemina conclavia dissimiliter poliunt et lectos non omnis paris magnitudine ac figura faciunt. Quod <si> esset analogia petenda supellectili, omnis lectos haberemus domi ad unam formam et aut cum fulcro aut sine eo, nec cum ad tricliniarem gradum, non item ad cubicularem; neque potius delectaremur supellectile distincta quae esset ex ebore <aliisve> rebus disparibus figuris quam grabatis, qui ἀνὰ λόγον ad similem formam plerumque eadem materia fiunt. Quare aut negandum nobis disparia esse iucunda aut, quoniam necesse est confiteri, dicendum verborum dissimilitudine <m>, quae sit in consuetudine, non esse vitandam.

'So this is the reason why two identical rooms are finished quite differently and why beds are not all made to the same size and appearance. Since if uniformity in furnishing were to be deemed desirable we would all have beds of the same form at home, whether with a *fulcrum* or not, and if we had a *triclinium* couch with a step, we would also have a *cubiculum* bed; nor would we any longer have pieces decorated with all sorts of figures in ivory or other materials to enjoy, but only *grabati* (simple beds), which by the same token would all be the same model made of the same material. Therefore we should either say that diversity is not acceptable, or, if we admit that it is, embrace a wider terminology.'

The distinction which Varro here draws between the terms *lectus cubicularis*, *lectus tricliniaris* and *grabatus* indicates that there were different types of Roman bed in 50 B.C. and probably earlier.¹⁷⁰ Before this date the only type for which there is archaeological evidence is the *lectus tricliniaris*, the 'bed with *fulcrum*'. Although the two other types are known from the written sources, they have never been coupled to actual forms in the archaeological literature.¹⁷¹ Perhaps we should apply one of Varro's other terms (*grabatus* or *lectus cubicularis*) to the 'beds with boards', but which one cannot be established from the texts. Whichever it may be, one term still remains beyond archaeology's power to attest.

3.2.2 *Biclinia*

In Herculaneum there are two instances of couches joined together at right angles (cat.nos. 5 and 6; figs. 48-57). Maiuri has correctly described them as *biclinia*, a term known from the Bacchides of Plautus (720 and 754) and elsewhere.¹⁷² A *biclinium* should be regarded as a

¹⁶⁷ Plin., Nat. 33.144. This is the only source for this usage of *deliacus* and yet the term is repeatedly used in the archaeological literature in reference to Delic bronze, and thence to beds with bronze appliqués. The link is not sustainable on the basis of this source alone.

¹⁶⁸ Cic., Mur. 75-76; Isid., Orig. 20.11.3; Plin., Nat. 33.144; Sen., Ep. 95.72; V.Max. 7.5.1. All these texts seem to go back to a single source, a meal organised by a certain Q. Aelius Tubero. It seems as if the term *lecti puniciani* is used here as a kind of *locus communis* to denote very simple couches. Nothing more is said about their form.

¹⁶⁹ *Grabatulus* only appears in Apuleius, in the *Metamorphoses*: 1.12; 1.13; 1.16; 1.22; 1.26; 2.15; 2.17. *Grabatus*: Apul., Met. 3.1; Canul. 10.22; Dig. (Scaevola) 33.7.20.8; Isid., Orig. 20.11.2; Itala, Mattheus 9.6; Lucil. 251; Mart. 1.92.5; Mart. 4.53.5; Mart. 6.39.4; Mart. 11.56.4; Mart. 12.32.11; Mor. 5; Petr. 92; Petr. 95; Petr. 97; Sen., Ep. 18.7; Sen., Ep. 20.9; Sen., Ep. 20.11; Suet., de Regibus 319.4; Var., L. 8.32; Vulgata, Actus Apostolorum 9.33; Vulgata, Amos 3.12; Vulgata, Evangelium secundum Marcum 2.4.

¹⁷⁰ Cf. Var., L. 9.46-47.

¹⁷¹ The point is illustrated by Liversidge's (1955, 11) remark about *lecti tricliniares* en *cubiculares*: 'But it may be that the two differed from one another very little in character.'

¹⁷² Other antique texts in which the term *biclinium* appears are: Gloss. 4.25.39; 4.211.37; 4.592.15; 5.172.32; 5.348.50; Quint., Inst. 1.5.68 (etymology).

variation of a *triclinium* (a dining room) in which stood lecti *tricliniaries*, couches upon which people reclined to eat and converse. It is therefore mistaken to associate the term *biclinium* with a bedroom, as Maiuri (1958, 419) does in another context ('cubicolo bicliniare'). In terms of construction, both the *biclinia* in Herculaneum closely resemble the 'bed with boards'. The example in the Casa a Graticcio has boards along the sides and backs of both couches, with the board on the right-hand side of the left-hand couch partly shutting off the front of the right-hand couch. The area within the bedframe is not exposed, and so we cannot see how the mattress was supported. The other example comes from the Casa del Alcova and, judging by the remains, was only fitted with boards at the ends. Here the mattress was supported by a Grid B construction, possibly combined with intersecting straps or ropes. The legs of this *biclinium* were originally discovered, but we have been unable to trace any sign of them.¹⁷³ A further *biclinium* was found during earlier excavations.¹⁷⁴

Because so few written sources regarding *biclinia* exist and because remains of *biclinia* inside houses are found only in Herculaneum, we can say nothing about their general distribution. Several *biclinia* have been found in gardens in Pompeii, but these are built of brick with a top layer of *opus signinum*. They are found in houses I 2, 10; I 2, 20 and V 2 g.¹⁷⁵ In the first two examples one long side measures 2.65 m. and the other 2.93 m., while in the third these measurements are 2.65 m. and 3.10 m.. If we compare these figures with the two *biclinia* in Herculaneum, where the long sides measure 2.40 m and 3.63 (cat.no. 5) and c 2.75 and c 3.40 (cat.no 6), we observe a much wider variation than is found in ordinary beds.¹⁷⁶

3.2.3. Children's beds

Two beds differ completely from the forms so far described: these are both children's beds, one of them a rocking cradle. In this cradle (cat.no. 11; figs. 78-80) the four corner uprights are linked in pairs at the bottom by two curved rockers. Three sets of rails, attached to the uprights, run all round the cradle. Across the rectangle formed by the lowest set of rails, six slats are fitted to support the mattress. The cradle is 83 cm. long, 50 cm. wide and 49 cm. high. According to Maiuri's description (1958, 345) the piece held the skeleton of a child but no traces of this now remain. Although the form is simple and functional, the construction seems not to have been widespread in the Roman period.¹⁷⁷ There are no other originals or even depictions known. Antique texts tell us that babies were usually laid to sleep in baskets or mangers (i.e. hollowed-out tree trunks). The most important source on this subject is the *Gynaecia* by the physician Soranos, written at the beginning of the 2nd century A.D..¹⁷⁸ The term used for cradles or children's beds in the Latin texts is *cunae* or *cunabula*, but nothing is said about the form of such pieces.¹⁷⁹ The only writers who describe the rocking of a cradle are Martial and the same Soranos.¹⁸⁰ The written sources thus confirm our conclusion that rocking cradles were not common. Compared with simple forms like mangers and baskets, the

¹⁷³ The legs were mentioned in the excavation reports of 17 July 1929. See appendix 1.

¹⁷⁴ See appendix 1: 19-6-1869, probably house II 5, first floor. The piece is described as seating ('sedile').

¹⁷⁵ They are included in the catalogue of P. Soprano 1950, 305-306, cat. 23, 24 and 26.

¹⁷⁶ Wooden *triclinia*, sometimes also called *stibadia*, which were found in the gardens in Pompeii, are not considered here. These were more pallets upon which mattresses were laid than real pieces of furniture. Examples are given by Soprano 1950, 307 no. 30-32, found in houses I 7,1 (Casa di Paquius Proculus); I 10, 4 (Casa del Menandro); I 10, 7 (Casa del Fabbro). The '*biclinia*' found in the gardens where the couches were not at right angles are also omitted. cf. Soprano 1950, 305-307. An example is still present in the house of Octavius Quartio (II 2, 2).

¹⁷⁷ Richter 1966, 110 placed the cradle in her 'beds with straight legs' category.

¹⁷⁸ Soranos, *Gynaecia* 2.10.16, cf. Temkin 1956.

¹⁷⁹ See for example Isid., Orig. 20.11.6: *Cunabula sunt lectuli in quibus infantes iacere consueverunt*. (*Cunabula* are beds in which children usually lie.); Suet., Aug. 49.9 (*cunae*).

¹⁸⁰ Mart. 11.39.1: *Cunarum fueras motor, Charideme, mearum*. (It was you, Charidemos, who once rocked my cradle.); Soranos, *Gynaecia* 2.17.40.

rocking cradle represents a much higher technical level,¹⁸¹ which suggests that it was a relatively expensive bed for a child. F. von Zglinicki (1979, 91-92), in his study of cradles, cites the Herculaneum piece as the oldest known example of the so-called 'Kufenwiege', and gives a host of later variants.¹⁸² It was undoubtedly the most important type of cradle in Europe from the 13th to the 19th century and the Herculaneum piece provides this popular form with an early origin.

The second child's bed (cat.no. 3; figs. 43-45) is simple and functional. A rectangular board, 1.20 m. long and 70 cm. wide, is mounted on two supports. Six round uprights originally stood along the edge of the board, carrying a rectangular frame which prevented the child from falling out of bed. A raised, flat rim around the edge of the board held the mattress in place. Both the form and the dimensions indicate that the bed was not for a new-born baby, but for a slightly older child. It can be assumed that this bed, with a form so clearly derived from its function as a child's bed, was not confined to Herculaneum. Nevertheless, no examples have been found anywhere else.

3.3 Tables

With one exception, all the tables preserved in Herculaneum are of the same type: a round tabletop resting on three legs, which are modelled into more or less stylized animal legs (cat.nos. 14-15, 17-19; figs. 94-101, 106-118). These legs are comprised of three elements. The claw of a lion or dog forms the base, above which the curved leg of the appropriate animal runs up to the knee joint (element 1). From here the table leg runs vertically upwards, sometimes with a figurative decoration mounted on the front and sides (element 2). Above this decoration the leg thickens and is crowned with an architectural motif (element 3).¹⁸³

The base of element 1 is usually a very naturalistic rendering of a foot with distinct toes and claws. Above this the animal's leg is sometimes very true to nature, with meticulous modelling of details such as the bone under the skin. These reveal the maker's familiarity with anatomy, as is very apparent in one of the Herculaneum fragments (cat.no. 22; figs. 121, 122 C). In other cases, however, the legs are entirely stylized with their basic shape still resembling an animal leg but without further details. Lion and dog legs are clearly represented in the Herculaneum tables,¹⁸⁴ but too little has survived of cat.nos. 20 and 21 to establish the kinds of animal involved (figs. 119-20, 122 A-B). Tables designed with animal legs were very common in the Roman period. Besides lions and dogs, we encounter the legs of panthers, cattle, horses, deer and antelope.¹⁸⁵ They could be in marble or bronze, as well as in wood.¹⁸⁶ We find animal legs, especially lion legs, in other types of furniture and in everyday objects. They appear in benches (see § 3.4.1), *sellae curules*,¹⁸⁷ and lamp holders.¹⁸⁸ The

¹⁸¹ Examples of mangers from northern Europe are given by Grodde 1989, 113-116 and 302 Kat. 346 and Taf. 25.1. The last example comes from Tofing, Schleswig-Holstein. See also Von Zglinicki 1979, 68-69.

¹⁸² Cf. Grodde 1989, 117-118.

¹⁸³ This threefold division was first suggested by Koeppen/Breuer 1904, 202.

¹⁸⁴ Lion legs: cat.nos. 14 (fig. 94), 16 (fig. 102), 18 (fig. 112), 22 (figs. 121 and 122 C); dog legs: cat.nos. 15 (fig. 98), 17 (fig. 107) and probably 19 (fig. 116). The 18th century excavation reports mention the find of another lion table leg, but this has been lost: see appendix 1: 7-12-1776.

¹⁸⁵ Table with deer legs: depicted on a painted gravestone in the form of an *aedicula* from Marsala, 1st century A.D., cf. Gabrici 1929, Tav. III 1; the wooden table in the Koninklijke Musea voor Kunst en Geschiedenis in Brussels has antelope legs; tables depicted on reliefs in the Istanbul Archaeological Museum (cf. Firatly 1964, 40-43, no. 34 and no. 69, pl. XI and XXIII from Beyarit, Vezneciler and Küçükçekmece) have equine and bovine hooves.

¹⁸⁶ For examples in other materials, see below and Pernice 1932, 1-11.

¹⁸⁷ Cf. Schäfer 1989, 179 with examples.

¹⁸⁸ Cf. Pernice 1925, 23-63.

style is usually derived from Classical Greek and Hellenistic models.

Element 2 can assume various forms. In some cases we find the carved head of a cat-like creature (cat.no. 14, 18; figs. 95, 111). The poor state of the legs at this vulnerable point does not allow us to trace all the details of the animal. However, the sharp ears and the protruding tongue with its point resting on the swell of the curve between the ankle- and knee-joints of element 1, indicate that we are dealing with griffins. The head sprouts, as it were, from a bunch of acanthus leaves, traces of which have survived in both tables. C.F. Moss (1988), who has made a study of marble table legs, only associates feline features on table legs with griffins when the creatures also have wings or horns. Almost all the others, according to him, are panthers, lions or lynxes. The open jaws with protruding tongue do not, in his view, constitute a distinguishing feature.¹⁸⁹ E. Simon (1962, 749-768) has suggested the designation 'Löwengreifen', or Persian griffins, to convey an Achaemenidean origin. These have panther or lion heads, like the examples in Herculaneum. By their association with vegetation, the acanthus calyx for example, Persian griffins can be linked to Dionysus/Bacchus, the God of wine, and would fit very well with the function of dining tables.¹⁹⁰ Moss (1988, 268-273), on the other hand, prefers to impute an apotropaic power to these fabulous animals. Beyond Herculaneum several wooden table legs with feline features on element 2 have come to light, one of them in Bergkamen-Oberaden. This example shows that the motif was already current at the end of the 1st century B.C..¹⁹¹ Further examples have been found made from Kimmeridge shale, a bitumen-holding rock which is relatively easy to work. These were all discovered near the English town of Dorchester and show stock Roman motifs modelled in this local stone.¹⁹² Liversidge (1950, 26) considers the table from the Casa dell'Atrio Corinzio in Herculaneum (cat.no. 14 here) to be better executed than the examples from England and puts this down to the limitations of Kimmeridge shale. In a later publication, Liversidge (1951, 194) describes the English examples as provincial variants, overlooking the limitations which the material imposed on the maker. Still later (Liversidge 1955, 40) she ascribes the difference both to the limitations of the material and to the greater skill of the Herculaneum craftsmen. She identifies the animal heads with protruding tongues which appear on many fragments as griffins (lion griffins).¹⁹³ On two fragments the griffins have horns, which makes their identification more straightforward.¹⁹⁴

Marble versions of the three-legged table also tend to have feline heads as element 2. Moss (1988) gives 118 examples of such tables ('type 9'), 108 of which sport the heads of felines, in his catalogue.

Besides the griffin motif, element 2 sometimes features a dog emerging from an acanthus calyx and running upwards, its rib cage pressed against the table leg.¹⁹⁵ The rear legs appear

¹⁸⁹ The four examples of felines with protruding tongue in Moss's (1988) catalogue are: A 167; C43; C44; C76.

¹⁹⁰ For the Dionysian interpretation of these Persian griffins, see Flagge 1975, 50-51 and 86.

¹⁹¹ From Bergkamen-Oberaden: cf. Horn 1987, 179-180 and Taf. 113; Kühlborn/Künzl 1988, 592-593, Kat. 430, in Münster, Westfälisches Museum für Archäologie, Fundnr. Oa 82, 193; height 57,5 cm., dated: before 8 B.C.; Kühlborn 1990, 182-184. An example was also found in the Fayum, Egypt: cf. Ransom 1902, 139 no. 3; Edgar 1903, 65-66 and pl. XXX, National Museum Cairo, inv. 27602, found in 1901.

¹⁹² The centre of production for these tables was presumably Kimmeridge Bay near Purbeck in Dorset. Thus most of the objects in this material come from southern England. Tables made from Kimmeridge shale are given by Nash-Williams 1932, 104; Liversidge 1950, 25-26; id. 1951, 193-194; Liversidge/Peers 1960, 72. Liversidge (1955, 37-53 and figs. 46-60) gives eleven fragments of table legs. Fragments of round table tops in this material were found in a villa at Brading, Isle of Wight (cf. Liversidge 1950, 28; Liversidge 1955, 47), at Silchester (Liversidge 1955, 47 and fig. 61) and at Caerwent (Liversidge 1955, fig. 61).

¹⁹³ See also Liversidge 1955, 41-44.

¹⁹⁴ One of these fragments comes from Norden in Dorset and is now in the Dorset County Museum in Dorchester (Liversidge 1955, 42-44 and 57-58); the other comes from Foscot in Buckinghamshire and is in the Fitzwilliam Museum in Cambridge (Liversidge 1955, 44-46 and fig. 59).

¹⁹⁵ Cat.nos. 17 and 19.

to be hidden in the leaves. In cat.no. 19 (fig. 118) the dogs are greyhounds, and in cat.no. 17 (fig. 108) they are molossians.¹⁹⁶ Greyhounds (*vertragi*) were imported from Gaul by the Romans. Their reputation was as very fast hunting dogs, mainly used for driving game. They did not bring down their prey.¹⁹⁷ Molossians (*molossi*) came from Epirus and were used for guarding and herding as well as for hunting. They were seen as trusty and brave, quick and strong. They belonged to the mastiff family and were less sleek than greyhounds.¹⁹⁸ In general, dogs were regarded as vigilant, faithful and as fending off evil.¹⁹⁹ As such they were associated with Artemis/Diana. In Rome there was a further link between dogs and the *Lares* (household gods), both of which were regarded as protectors of the house.²⁰⁰ Thus dogs were seen on the one hand as hunters and on the other as guardians of the house. Their appearance on the dining tables of Herculaneum, however, must be primarily linked to the hunt, since they are depicted in action as hounds in pursuit. The presence of dogs here parallels the busts of Artemis/Diana which adorned the appliques of *fulcra* (see § 4.7.1) on dining couches.²⁰¹ The link between hunt and meal was often made in the Roman period, good examples being provided by depictions of meals in the open air.²⁰² Thus while the griffins, through their association with Dionysus/Bacchus, seem to refer to the wine consumed with the meal, the dogs refer to the food itself, the bag of the hunt. Three wooden table legs from the Casa Sannitica, now lost, must also have had this type of canine decoration.²⁰³ Wooden table legs with greyhounds have been found elsewhere, from which we can conclude that this was a popular motif with a wide distribution in the Roman period. There are examples from the Crimea and from Egypt.²⁰⁴ Dogs sometimes appear decorating tables made of materials other than wood. In one fragment in Kimmeridge shale, found in a villa at Preston near Weymouth, a greyhound coursing up the table leg is even combined with the head of a griffin.²⁰⁵ A bronze table with greyhound decoration has been found in Pompeii.²⁰⁶ The motif does not appear on three-legged marble tables,²⁰⁷ which may have to do with the fact that these tables were used in gardens where a Dionysian iconography would be more appropriate.

According to Maiuri (1958, 260), the table from the Casa del Mobilio Carbonizzato (cat.no. 15; figs. 97-101) was also decorated with the heads of greyhounds, but this does not

¹⁹⁶ For this information I am indebted to E.M. Moormann. In the classical sources the molossian is mentioned in Lucr. 5.1063-1072 and in Petr. 64.

¹⁹⁷ Cf. Keller 1909, 101-102; Jennison 1937, 126; Toynbee 1973, 104; Zaganiaris 1980-1981, 67. Kozloff 1981, 196-197 nr. 1.

¹⁹⁸ Cf. Keller 1909, 103-106; Jennison 1937, 126; Toynbee 1973, 101 and 106-107; Zaganiaris 1980-1981, 71.

¹⁹⁹ Cf. Zaganiaris 1980-1981, 52. An alternative iconography of dogs, which is not considered here, links them with death (Kerberos/Cerberus) and healing (as the companion of Asklepios/Aesculapius), cf. Toynbee 1973, 122-124.

²⁰⁰ Cf. Ov., Fast. 5. 137-142: *At canis ante pedes saxo fabricatus eodem/ stabat: quae standi cum Lare causa fuit?/ servat uterque domum, domino quoque fidus uterque:/ compita grata deo, compita grata cani./ exagitant et Lar et turba Diania fures:/ pervigilantque Lares pervigilantque canes.* (But a dog stood at their feet, hewn from the same stone: for what reason did it stand next to the Lar? Both guard the house, and both are faithful to their master: crossroads are dear to the god, crossroads are dear to the dog. Both the Lar and Diana's pack of hounds hunt thieves: constantly vigilant are the Lares, constantly vigilant are the dogs).

²⁰¹ For the appearance of Artemis/Diana on *fulcra* see Faust 1989, 100-102, although no interpretation of the motif is given here. Examples can be found in Amedick 1993, 185.

²⁰² See appendix 1: 11-5-1928, inv. E. 256.

²⁰³ The Crimea, Kertch: three legs from one table, now at the Hermitage in St. Petersburg, inv. P 1842.66, cf. Ransom 1902, 125-126 and fig. 2; Schwendemann 1921, 117, 5; Vaulina/Wasowicz 1974, 166-169, cat. 98 and pl. CXXXII (cypress wood). A leg in the British Museum, London, inv. 300, also from Kertch, cf. Ransom 1902, 139 no. 2 and Richter 1926, fig. 215 and 1966, 373; Vaulina/Wasowicz 1974, 166 note 36; there must be a further example, found in 1948, cf. Vaulina/Wasowicz 1974, 166 note 35; Egypt: a leg, now in the Royal Scottish Museum in Edinburgh, cf. Aldred 1957, 235 and fig. 208.

²⁰⁴ Cf. Liversidge 1955, 38, 46 and fig. 48.

²⁰⁵ This bronze example was found on 18-3-1844 on the Via della Fortuna, cf. Fiorelli 1862, 430, and is now in the Museo Nazionale in Naples, inv. 78613, cf. Ruesch 1908, 328, no. 1738; Tarbel 1909, 103 pl. 24 (copy in the Field Museum of National History in Chicago, inv. 24281); Spinazzola 1928, tav. 263; Talamo Vattimo/Cima di Puolo 1990, 66, 149 figs. 103 and 260.

²⁰⁶ Moss (1988) gives no example for type 9.

accord with either the excavation reports or the present remains. In fact this table never had an element 2, the transition between elements 1 and 3 being accomplished with a volute. That such an effect was in no sense unusual in furniture is clear from a large group of rectangular marble tables with four legs from Pompeii. For Pernice (1932, 1-4) these represent the earliest form of table support to be found in Pompeii, the form going back to Greek-Hellenistic examples. In terms of the typology given by Cohon (1985, 4-8), the leg with volute resembles the type II marble table support, which he too regards as a continuation of a Greek prototype. The beginning of this development must be sought in the 4th and early 3rd centuries B.C..²⁰⁸ We also find volutes crowning the legs of *thronoi* and beds from the late-Archaic period in Greece.²⁰⁹ According to Cohon (1985, 58), the style fell out of fashion in the early Augustan period. Thus the table in Herculaneum may either date from the 1st century B.C., or else represent an old fashioned form.²¹⁰

Element 3 consists of a simple, block, rather like a capital, which rises at an angle from the section of the leg behind element 2.

The tabletop is round and flat on both sides. The edge always displays a double or triple moulding, which either increases²¹¹ or reduces²¹² the diameter of the top surface. On the underside, the edge of the table usually meets the front of the legs.

One table (cat.no. 16; figs. 102-105) appears to belong to the same type but there are two major differences. The decoration of element 2 consists of the head of a young man with garland, possibly Dionysus/Bacchus. This identification is based on the study by R. Stuveras (1969), who argues that the Bacchic putto can be recognized by the surrounding vegetation or by the combination with Bacchic animals such as lions or panthers.²¹³ The ultimate Bacchic putto would of course be Dionysus/Bacchus himself.²¹⁴ Both requirements are met in this case: element 1 of the table leg is a lion's leg, while the young man of element 2 wears a garland of ivy. That this decoration appears only on this table may be simply a matter of chance. The small number of wooden tables which have survived does not allow any statistical pronouncements to be made on the frequency of particular motifs. An even more striking difference lies in the shape of the tabletop, which is crescent shaped. It is also quite thick, with its edge vertical rather than moulded. The function of the table is unclear. It could be an extension piece, to be placed against another table to lengthen it into an oval. If so, very little extra room would have been gained. Another possibility is that the table was placed against a column. It would then have served a purely decorative function, as a pedestal or small console table.²¹⁵ Anthropomorphic busts in bronze appear elsewhere as element 2 of table legs, both in three- and four-legged tables.²¹⁶ According to F. Harl-Schaller (1976-77, 49), who has

²⁰⁸ For his type see Cohon 1985, 47-58 and his cat. 50-71. For stylized lion legs crowned with volutes see also the marble seats of honour in the theatre of Dionysus in Athens (Bieber 1961, 70).

²⁰⁹ *Thronoi*: Richter 1926, 16 and 29; Richter 1966, 23-25 and figs. 100-116. The most famous *thronos* in this respect is the one upon which the goddess of Tarente sits in Berlin (marble), cf. Richter 1966, 25-26 and figs. 101-103. Beds: Richter 1926, 59-60 and figs. 158, 160, 162-168, 170; Richter 1966, 58 (type 3), figs. 310-322, 325-327, 331.

²¹⁰ For rectangular bronze and marble tables on four legs see, respectively, Boube-Piccot 1968/1972, passim and Moss 1988, type 10. The volute motif crowning a lion leg also occurs in marble thrones, for example the bishop's throne in S. Pietro in Vincoli in Rome, which may originally have been a seat of honour in a theatre and can be dated to the early Augustan period, cf. Cohon 1985A, 92-104 and pl. 7, 1-2.

²¹¹ Cat.nos. 14, 17, 18, 19; respectively figs. 94, 110, 112, 117.

²¹² Cat.no. 15; fig. 98.

²¹³ Stuveras 1969, 13-31.

²¹⁴ Stuveras 1969, 21.

²¹⁵ A comparable form is found in the semi-circular or half oval tops of tables from Delos (Deonna 1934, 7 fig. 7, no. 5 and 6). The Delos examples had a cultic function, which can be ruled out for the Herculaneum table. The half ellipse returns later in dining tables to go with *sigmata* (crescent-shaped dining couches; see § 5.5.1), but the top of the table in Herculaneum seems too small for a dining table.

²¹⁶ Cf. Richter 1926, 137-139 and figs. 322-323; Richter 1966, 111 and fig. 563.

made a study of anthropomorphic busts on table legs, the origins of the motif should be sought in Hellenistic-Alexandrian art, where we find depictions of Harpocrates children sprouting from lotus leaves. The young winged gods can be identified with Eros, according to Harl-Schaller (1976-77, 48), and the wingless versions with Dionysus/Bacchus or Harpocrates.²¹⁷ Schäfer (1989, 176-179) regards similar cupids, which sprout from foliage on the legs of *sellae curules*, as 'Genien, die als allgemeine Sinnbilder auf die Felicitas temporum verweisen'. In contrast to most of the bronze examples, where the busts are always rendered with arms, the figures on the Herculaneum table have no arms and can therefore be compared with herms. This motif is Greek and occurs in both Classical and Hellenistic periods.²¹⁸ Herms of the young Dionysus/Bacchus were very popular on marble table legs. Moss (1988) gives 21 examples in his catalogue. Three of these were definitely found in Herculaneum, making it quite clear that the motif was known in the town,²¹⁹ while three bronze legs with herms of Dionysus/Bacchus from the 1st century A.D. were found at Modena.²²⁰ The herm of Dionysus/Bacchus always symbolises the rebirth of nature in the spring,²²¹ and the appearance of herms on table legs can be regarded as a variation on the typically Roman theme of tables with animal protomes. A Greek-Hellenistic influence on herms of the young Dionysus is thus very probable, but because the examples on the Herculaneum table do not sprout from foliage we cannot assume that the motif was influenced by the Alexandrian busts of Harpocrates. What we are seeing here is the incorporation of free-standing Greek herms into Roman table legs.

There remains one further motif known to have been used in element 2, namely the swan's head. In the collections of the Royal Museums of Art and History in Brussels there is a table from Egypt with antelope-form legs and the swan heads as element 2.²²²

When comparing marble and wooden three-legged tables, Moss (1988, 43) remarks: 'The few extant wooden pieces have slightly fuller forms, but are more linear in design and seem to have been disposed more obliquely than the essentially upright marble supports. The wooden pieces also show motifs which do not appear on marble examples of type 9.' A marble example in the Galleria dei Candelabri of the Vatican museums has heads of Hercules/Heraclēs with lion skin.²²³ More animal heads, this time swans, ducks or snakes, crown the posts of the back rests of Greek *klismoi* and *thronoi*.²²⁴ These protomes, however, are a quite distinct group

²¹⁷ In her catalogue of bronze and marble table legs with anthropomorphic busts, Harl-Schaller (1976-1977) lists 51 metal and 24 marble examples. Portrait busts of deities who sprout from acanthus leaves are regarded by H. Jucker (1961, 178-180) as a continuation of a corresponding Egyptian motif with a lotus flower. Other examples are: Museo Nazionale Naples, inv. 1519, cf. Ruesch 1908, 357, no. 1520; Brummer Collection 1979, 126-127 nr. 566: element 2 here has the form of a winged Eros with a frog in his hand; see also Moss 1988, cat. A 9, A 20 and A 39 (all three on *monopodia*).

²¹⁸ Cf. Wrede 1972, 150-152.

²¹⁹ Moss 1988, 544 ff. cat. A 194, A 199, A 200, A 203-205, A 216-223, A 246-247, A 250-251, A 273-274, A 278. From Herculaneum come A 199 (found on 8-4-1936, inv. E 1486), A 200 (found in *oecus* G of the Casa del Salone Nero) and A 203 (found in Herculaneum II 5 on 19-6-1869).

²²⁰ Cf. Ortalli 1989, 354-356 no. 3 and figs. 282-283.

²²¹ Cf. Flagge 1975, 125-126.

²²² From Thebes, bought by J. Capart in 1905, H. 85 cm. and diameter 55-58 cm., cf. Vaulina/Wasowicz 1974, 167 note 37 (bibliography) and fig. 94. Richter (1926, 87-88 and fig. 213; 1966, 70-71 and figs. 272, 277) also describes the piece and mistakenly calls it Greek, as do Baker (1966, 285) and Feulner (1930, 31 and 1980, 24). See also Cohon 1985, 443-446 nr. 6-10. A table with swan heads in element 2 is also depicted on the stele of Matrodoros and Kaligeiton from Fatih, which is now in the Museum in Istanbul (inv. 16), cf. Richter 1926, fig. 214; Firatly 1964, no. 36 and pl. X; Richter 1966, 112 and fig. 568.

²²³ Cf. Richter 1966, 112 and fig. 580.

²²⁴ Cf. Richter 1926, 46 and 1966, 34. As an example we can take *klismoi* which are depicted on a black figured plaque of Exekias, now in Berlin (Staatliche Museen Inv. 1811-26, cf. Richter 1966, fig. 166) and a red figured *kylix* in Tarquinia (inv. R.C. 6848, signed by Oltos, cf. Richter 1966, 34 and fig. 167). On several black figured amphoras we also find depictions of Greek seats with animal protomes crowning the back- or armrests, cf. Richter 1966, 24 and figs. 90-95. In the British Museum (inv. B 379) there is a 'Siana cup' by the Cassandra painter which shows the backrest of Zeus' throne in the form of a snake, cf. Brijder 1983, 143 nr. 121 and pl. 24b; a dish by the Heidelberg painter in the Archäologisches Institut of the Karls-Universität (inv. S 5; dated ca. 560-550 B.C.; cf. Brijder 1991, 449 and pl. 120a) and a fragment of a *kantharos* in the

and have no direct link with those found on Roman tables.

Of the Herculaneum tables, those which are more or less completely intact are between 59 and 68 cms (*c* 2½') high, the narrow range of variation being probably due to their function as dining tables. The diameter of the tabletops, on the other hand, varies from 42 to 57 cm. (*c* 1½-2'). The largest tabletop to be found, which had a diameter of 61 cm., came from the Casa a Graticcio.²²⁵ Unfortunately it has not survived.

The tables are constructed together as follows. The three legs are probably attached to the tabletop with mortise-and-tenon joints, although these are not visible. However, on the basis of material from other places we can assume that the legs ended in tenons which fitted into mortises in the tabletop. This must previously have been visible in at least one of the Herculaneum tables, since J. Liversidge (1950, 26), referring to a correspondence with Maiuri about the table from the Casa dell'Atrio Corinzio (cat.no 18), tells us: 'Its legs have the usual tenon tops which fit into mortises on the underside of the table.'²²⁶ The top of the table leg from Bergkamen-Oberaden ends in a dove-tail tenon which fitted into the table.²²⁷ This alone does not produce a stable construction, however, and several tables thus have stretchers fitted square to the back of the legs to provide greater strength (cat.nos. 15 and 18).²²⁸ The three stretchers meet in the middle and are there clamped between two turned bosses. The upper boss of one table (cat.no. 18) has survived.²²⁹ It is very likely that all the tables had such stretchers, although most of them are missing. The modern supporting frames prevent us from seeing any traces of the joints in the backs of the legs. Three leg fragments (cat.nos. 20-22; figs. 119-122) have a bulge at the back, just above the carved knee joint. A pin may well have been inserted here, perhaps of loose wood or metal (a rust coloured mark on the surface of the wood would seem to indicate metal). In a table in Edinburgh an extra dowel was fitted right through the leg and stretcher tenon.²³⁰ This construction will be examined in more depth in § 4.6.2. The horizontal stretchers which appear in many marble tables are structurally redundant (fig. 4),²³¹ which could indicate that these are based on wooden prototypes.

All the tables from Herculaneum, except for the one with the crescent tabletop, are of the type described in the written sources as *mensa delphica*, or merely *delphica*.²³² K. Schwendemann (1921, 114) believed that the form, a round tabletop on three legs, was derived from the famous tripod in the Temple of Apollo in Delphi. This would certainly help to explain the Latin name, although in Schwendemann's view any link with the cult of Apollo was entirely absent in the Roman period.²³³ We tend to incline more towards an Eastern origin for this sort of table, possibly introduced into Greece during the 4th century B.C.. This is suggested by a depiction

Acropolis collection of the National Museum in Athens (inv. 2133a; cf. Brijder 1991, 378, 406 and pl. 153a) show backrests culminating in the heads of birds.

²²⁵ See appendix 1: 16-10-1928.

²²⁶ Cf. Liversidge 1955, 40. Similar items from elsewhere show the same solution: two legs from Kimmeridge shale have a tenon for fitting to the top, cf. Liversidge 1950, 25-26 and plate I 1 and 2 from respectively Colliton Park and Frampton, England; cf. also Liversidge 1955, figs. 44-47. An example from Kertch: cf. Vulina/Wasowicz 1974, 166 and plate CXXXII; this piece is now in the Hermitage in St. Petersburg, inv. P. 1842, 66. A leg from Bergkamen-Oberaden, Germany: cf. Horn 1987, 179-180, Abb. 113; Kühlborn 1990, 182-184.

²²⁷ Cf. Grodte 1989, 126.

²²⁸ Cat.no. 15: figs. 97 C-G, 98-99; cat.no. 18, figs. 111 and 114 C-F.

²²⁹ The form of the rungs and the central boss can be clearly seen in a small bronze table in the Musée Départemental des Antiquités in Rouen: cf. Espérandieu/Roland 1959, 83 no. 189 and pl. LVII. For the rungs, see also a miniature table in lead found in the temple of Jupiter Anxur in Terracina, cf. Prins de Jong 1954, 46 fig. 1, centre bottom.

²³⁰ Cf. Aldred 1957, 235 and fig. 208.

²³¹ For a discussion of these rungs in marble tables see Moss 1988, 40-41.

²³² Cic., Ver. 2.4.131; Mart. 12.66.7; Porphyrio ad Hor., S. 1.6.117; V.Max. 4.1 ext. 7; Prokopios, de Bello Vandalico 1.21; Gloss. 5.633.44. Nodet (1989, 533-542) discusses the term *mensa delphica* and demonstrates that one of its two meanings refers to a round table on three ornamented legs. In the past the link between the term and such tables had been made, but not convincingly proved.

²³³ Cf. Schwendemann 1921, 148.

on a relief from Byblos which can be dated back to the 12th century B.C..²³⁴ The moment of introduction from the East seems to have coincided with the introduction of depictions of banqueting scenes, the so-called 'Totenmahlreliefs' (funeral banquet reliefs). The examples from the first half of the 4th century B.C. tend to have rectangular tables on three legs.²³⁵ Dentzer (1982) gives 130 examples of this sort of relief from the period 420-300 B.C., of which 184 have tables with a rectangular tabletop and only 11 a round one. From this we can calculate that the round table began to gain ground on such reliefs from around 350 B.C..²³⁶ The Romans in their turn adopted this Hellenistic form, possibly in the 2nd century B.C.. A passage in Varro, written in about 50 B.C., provides evidence for this. The Romans, he says, exchanged their original rectangular tables for round ones.²³⁷ Yet whatever the precise chronology, the later Roman name for the round version could still have stemmed from its resemblance to the tripod in the Temple of Apollo in Delphi.

Examples of round tables on three legs from as early as the 9th century B.C. have been found in Italy,²³⁸ but these seem to have had no influence on the Roman version. Neither do the wooden tables of which four examples were found in Verucchio near Rimini. These certainly have three legs and a round tabletop, but animal leg forms are absent.²³⁹ The resemblance between the form of these early tables and the later Hellenistic and Roman ones probably has a more practical explanation: the stability of the three legs lent them great popularity in various cultures without any mutual influence necessarily being required. There are also Etruscan depictions of round three-legged tables. These can all be dated in the 3rd and 2nd century B.C. and, like the Greek examples, are usually part of banqueting scenes.²⁴⁰

The Hellenistic examples lack the decoration two-thirds of the way up the leg (element 2), which is so characteristic of the Roman version.²⁴¹ The basic form of the table, without decoration, must in fact have been present in Campania at an early date. The oldest known depiction from this area can be seen on a bell krater dating from 350-325 B.C., now in the Museo Nazionale in Naples.²⁴² The earliest datable Roman *mensa delphica* with a decoration two thirds of the way up the leg is the marble table in the *atrium* of the Casa dei Quadretti Teatrali (also known as the Casa di Casca Longus) in Pompeii (I 6, 11). Moss (1988, 107) identifies the inscriptions at the top of each leg with P. Servilius Casca Longus, and thus regards the year of his death, 42 B.C., as a *terminus ante quem*.²⁴³ Almost all the other marble examples given by Moss are certainly younger. We can therefore assume that the animal

²³⁴ The relief from Byblos is now in the Archaeological Museum in Beirut, cf. Baker 1966, 207 fig. 337; Laser 1968, 65-66 and 81; Gubel 1987, 37-38, 251-252, cat. 1 and pl. 1.1. In connection with the Eastern origin of round tables on three legs, see also: Pritchett 1956, 242; Firaŭly 1964, 20-22; Dentzer 1969, 195-224; Dentzer 1982, 68-69 and 153; Moss 1988, 37.

²³⁵ Cf. Thönges-Stringaris 1965, passim; Dentzer 1970, 67-90.

²³⁶ Dentzer 1982, 333: 'couramment à partir du milieu du siècle.'

²³⁷ Var., L. 5.118: *Mensam escariam cillibam appellabant; ea quadrata ut nunc in castris est; a cibo cilliba dicta; postea rotunda facta*. (They called a dining table *cilliba*; this was square, as you can still see today in an army camp; the term *cilliba* is derived from *cibus* [food]; later the dining table became round.)

²³⁸ Richter (1966, 95 and figs. 472-473) mentions two terracotta tables in miniature, found in the Villa Cavaletti in Grottaferrata, now in the Museo Preistorico Etnografico Pigorini in Rome, inv. 79232-79233; cf. Steingraber 1979, 119-120.

²³⁹ They were found in tomb 26 of the Fondo Moroni (one example), cf. Gentili 1985, 88-89, no. 53 (legs) and 55 (top), respectively inv. 8642 and 8644; Gentili 1985A, 24-26 and 1988, 233: three examples from grave 85 of the 'Necropoli sotto la Rocca'.

²⁴⁰ Cf. Richter 1966, 94 and Steingraber 1979, 49 and 169-170 ('Tischtyp 3'). An urn relief from Volterra shows a table with rungs and animal heads. In our view this can be dated from the end of the 1st century B.C. or later. Steingraber 1979, 238 Kat. 194 and Taf. XIII 2 calls it Hellenistic.

²⁴¹ Besides the work of Dentzer (1982, passim) already referred to, see other Hellenistic examples without decoration in: Holwerda 1931, 29-30 afb. 39-40, dated 3rd century B.C.; Richter 1966, 70-71 and figs. 367-371. It is not always clear whether the wooden tables which appear in *symposium* scenes in Pompeian wall paintings are in fact Hellenistic or Roman. Eating and drinking utensils always stand on these tables. Examples of this type of painting are given by Fröhlich (1991, 222-229) and Varone (1993, 622-630).

²⁴² Inv. RC 144; cf. Dentzer 1982, 131 VCa 10 and pl. 22 fig. 122.

²⁴³ See also Moss 1988, 107 and 754-756, cat. C 66 (with bibliography).

or anthropomorphic motifs of element 2 were introduced during the 1st century B.C. as a Roman innovation. Neo-Attic workshops could have stimulated this development. Table legs incorporating animal leg forms and decorative heads at two-thirds height thus combine older motifs from various sources into a new, typically Roman, form.²⁴⁴

The type must have become rapidly popular, judging by the large number of tables which have been found in a variety of places, and especially in the towns around Vesuvius. Most of the known examples are made of marble and served both a formal and a decorative function (fig. 4). They are generally found in gardens.²⁴⁵ Bronze tables of this type, a less numerous group, must likewise be regarded as luxury items and would similarly have served a formal purpose (fig. 5).²⁴⁶

Although there are very few remaining examples of wooden *mensae delphicae*, wood would have been the most common material used for this type of table. Indeed, we can probably assume that wooden tables served as models for the marble and bronze versions, since these often retain details of the wooden construction.²⁴⁷ The continuing popularity of three-legged tables, which lasted from Hellenism until late antiquity, can be ascribed to their relatively simple structure and to their stability.²⁴⁸

The motif of animals or people emerging from foliage returns in many Roman *mensae delphicae* and merits a little more attention. There are clear resemblances here with the grotesques which appear in wall paintings and it is possible that both motifs go back to a common source. The grotesques first appear in Second Style wall paintings, amongst other places in the Casa di Caesius Blandus (VII I, 40) and the Casa del Criptoportico (I 6, 2-4) in Pompeii and in the Casa di Livia on the Palatine in Rome.²⁴⁹ The clearest resemblances, however, are with the grotesques so common in the Fourth Style. In Greek art we find several combinations of gods and goddesses with limbs sprouting into tendrils as early as the 4th century B.C.. The female figures can be identified with the *Potnia Theroon* and the male with the god Sabazios. The earliest datable example is a depiction in relief on a throne found on the Acropolis in Athens, which can be linked through the inscription with the archon Kallistratos

²⁴⁴ See also Daszewski 1966A, 102.

²⁴⁵ Cf. Moss 1988, 328-332: 'primarily ... domestic garden furniture.'

²⁴⁶ For marble examples: Daszewski 1966A, 100-103 and figs. 1-2, Warsaw, National Museum inv. 147570-147589, find spot unknown; Moss 1988, passim; frequent reference is made to two marble tables in the Casa dei Cervi in Herculaneum, found 27-7-1930 and 6-8-1930 (inv. E 523 and E 526, see fig. 4 below), cf. Tran Tam Tinh 1988, 103-104 and note 7 (bibliography) and figs. 158-159; bronze examples: the so-called tripod with sphinxes (see fig. 5 below), whose original use as a table was demonstrated by Pernice (1908, 110 Abb. 4 and 111). He ascribes this table to Herculaneum, while the Temple of Isis in Pompeii is usually given as the find spot, amongst others by Overbeck/Mau (1884, 430), Ruesch (1908, no. 1542), Richter (1926, 139 and fig. 325), Spinazzola (1928, tav. 257-259) and Richter again (1966, 112 and fig. 567). The piece may well have been found in Herculaneum, although we have not found any reference to it in the excavation reports. It seems unlikely to have come from the Temple of Isis in Pompeii, however, since it is not included in the list of finds given in the thorough study of the temple made by De Caro and others 1992. The tripod is now in the Museo Nazionale in Naples, inv. 72995, cf. Ruesch 1908, no. 1542; Pernice 1925, 1 and Taf. X; Talamo Vattimo/Cima di Puolo 1990, 67 and figs. 110 and 112. The table incorporating ithyphallic satyrs belongs to the same type. This example comes from the *Praedia* of Iulia Felix in Pompeii and is also in the Museo Nazionale in Naples, inv. 72994; cf. Richter 1926, 139 and fig. 326 and Richter 1966, fig. 563. A fragment of a bronze example from Herculaneum: only a bust of Eros and an acanthus calyx (see appendix 1: 22-10-1960; inv. E. 2214bis). Bronze examples from Pompeii, cf. Sogliano in NSc 1899, 441-442 and fig. 4: decorated with the head of a bitch; NSc 1901, 331-333: lion legs with cupids as element 2, bearing a marble top. Bronze examples of folding tables are given by Schwendemann 1921, 107-114. From these developed a very common group of bronze folding tables with panther claws and protomes at the base and busts at the edge of the table, cf. Wuilleumier 1928; Kent Hill 1951; Bónis 1983; Nuber 1984, 53-57.

²⁴⁷ Wooden examples also appear on wall paintings in Pompeii which show scenes apparently close to everyday Pompeian practice. Examples are the *salutatio* in the tomb of Vestorius Priscus (cf. Spano 1943, 274 and 273 fig. 9; Mols/Moormann, 1996) and paintings with dining scenes from the Casa del Triclinio (Museo Nazionale, Naples, Inv. 120029-120031: cf. Fröhlich 1991, 222-229 and Taf. 20,2; 21, 1-2).

²⁴⁸ Cf. Schwendemann 1921, 99.

²⁴⁹ See also Pappalardo 1982, passim; for painted herms see Moormann 1988, capitolo II.

(355-354 B.C.).²⁵⁰ These motifs return in the 1st century B.C., possibly around the year 50, and become extremely popular. The impulse behind the new trend may have come from neo-Attic workshops, breathing new life into a 4th century motif. One of the features of this trend is the absence of gravity, as is very clear in both the painted grotesques and in their sculpted furniture equivalents: the leaves never bend beneath the weight of the busts.²⁵¹ The association of tendrils with animals or gods is generally interpreted as Dionysian. This is possibly because a merging of Dionysus/Bacchus and Sabazios took place in the Roman period, both gods expressing the blossoming and decay of nature and representing rebirth.²⁵² In the Third Style the grotesques appear little in wall painting and are entirely absent in official Augustan sculpture.²⁵³ The explanation for this lies in the brief subjection of the Neo-Attic to the Classical Attic tendency which took place at this time.²⁵⁴ In the Fourth Style the *monstra* stage a revival and remain in fashion right up to the time of Hadrian.²⁵⁵ One can here speak of a trend or fashion and expect to find it reflected in other forms of Roman applied art. However, it is not yet clear whether the caesura which occurred in wall painting during the Third Style also occurred in furniture. In a period when the general trend can be observed in furniture it is very difficult to precisely date wooden tables on stylistic grounds. Moss (1988, 142-158) acknowledges the same problem in his discussion of marble table legs. He observes a certain conservatism in the rendering of small ornamental details as well as wide variations in quality. Both factors complicate dating on the basis of style. Thus as far as the wooden tables in Herculaneum are concerned, we can be little more precise than to date their creation to between 50 B.C. and 79 A.D.. We suspect that the feline heads in element 2 of table legs appeared fairly early (they were certainly present around 50 B.C.) and that the other animal forms (such as the running dog motif) and the anthropomorphic busts only came into fashion during the 1st century A.D., just as grotesques were reappearing in Fourth Style wall painting. There was in fact a boom in grotesque forms around this time.²⁵⁶ If this is correct, Herculaneum's wooden tables with griffin heads would have been made within the very broad time span of 50 B.C. to 79 A.D., and those with dogs and the example with herms of Dionysus/Bacchus only after about 40 A.D.. However, this remains speculation. All that can be said with confidence is that the motifs on the table legs can be linked with Dionysus/Bacchus (griffins and herms) or with Artemis/Diana (dogs). This accords well with their function as dining room tables, with the first group linked to wine and the second to solid food. Nor should we forget the purely decorative value of such motifs.

3.4 Seating

Four pieces of seating furniture have survived from Herculaneum. These comprise three benches and a stool, all of which were initially set up on metal or wooden frames. Three of

²⁵⁰ Cf. Curtius 1928, 292-297; Toynbee/Ward Perkins 1950; Micheli 1987, 63-79; Moormann 1988, 13-15. Also from the 4th century come depictions of the *Potnia Theroon* in the tympana of Hellenistic coffins, cf. Watzinger 1905, 28-30 Nr. 4 (from Abusir) and 37-38 Nr. 13 and Abb. 65-66 (from the Crimea).

²⁵¹ Cf. Sauron 1988, 2. It is precisely against the unnaturalness of the *monstra* that Vitruvius fulminates in *de Architectura* 7.5.3-4. Perhaps he is here expressing the general view in the period of Augustus. See also Ehrhardt 1987, 152-162.

²⁵² Cic., N.D. 3.23. Cf. Picard 1935, 331-332; Flagge 1975, 91.

²⁵³ For an example of grotesques in the Third Style see Peters 1993, 230-231: in the central candelabrum on the north wall of the *atrium* of the Casa di M. Lucretius Fronto in Pompeii.

²⁵⁴ Cf. Picard 1981, 147; Sauron 1988, 34-39. The last writer regards Augustan art as more Apollonian than Dionysian in nature.

²⁵⁵ Cf. Picard 1981, 143-149.

²⁵⁶ This is beautifully expressed by Feulner in his *Kunstgeschichte des Möbels*: (1930, 31 and 1980, 24): 'Die kombinierten Tierfüsse hat die römische Kunst übernommen und zum Tierpark mit märchenhaften Varietäten ausgebaut.'

them (cat.nos. 23, 25 and 26) have recently been transferred to plexiglass.

Several other fragments, now housed in a storeroom in the south-eastern corner of *Insula VI*, may possibly come from seating (see appendix 2). The excavation reports refer to a further seat constructed from various turned elements. Unfortunately it has since been lost and the description given is too summary for a clear picture to be formed.²⁵⁷

3.4.1 Benches

The three preserved benches have a simple form: a rectangular seat is fitted to two supports or four legs. There are no arm- or backrests (figs. 127-136). The two benches on supports (cat.nos. 24 and 25; figs. 127-132) are constructed from just three elements: the two supports and the seat itself.²⁵⁸ The supports are flat at the back and along the base, while in the front they have been given an S-shaped curve recalling the profile of a stylized animal leg below the knee joint. The outer face of one support shows remains of a carved volute. The seats have a slight depression in the middle to make them more comfortable and are rounded along the front edge. The top edges are decorated with mouldings or simple rims.

The supports were attached to the seat with tongue and groove joints, the tongue having a dove-tail form. There may have been low rungs or panels running between the supports to lend extra strength to the construction.

One of these benches (cat.no. 25; figs. 129-132) was for many years standing in a damp storeroom on the *Isola Sacra*, and by 1987 was in a very bad state. Fortunately it was given priority in the restoration programme and is now revealed as much more highly finished than the similar piece found in the *Casa del Sacello di Legno* (figs. 127-128), which is cumbersome and crude by comparison.

The seat of the third bench resembles the other two, but is carried on four legs (figs. 133-136). The rear legs are straight and square in section. Their bases fit into stretchers which link them to the front legs. These are flat and vertical at the back and sides and modelled in the front. Essentially we find the same S-shaped curve as in the other two benches but here the animal claw is incorporated, albeit in stylized form. However, where the bend of the S extends forward, the curve is broken off with a scroll just above the claw. This creates a fantasy form with animal leg features. The rear legs are attached to the seat with mortise-and-tenon joints, the front legs with dovetails. This is the most elaborate of the three benches.

In their basic form, all the benches are of the same type. A striking feature is their one-sided orientation: at the back they are finished flat and without any decoration, which suggests that they were all designed to be placed against the wall. Cat.no. 24 is somewhat longer than the other two (1.40 m : 1.05 m. = c 5' : 3½'), which may indicate that it was a three-seater and the others two-seaters. The depth of the benches varies between 27 cm. (cat.no. 24) and 42 cm. (cat.no. 26); the first is decidedly cramped, the second a comfortable size. The heights correspond closely (37-39 cm.), which is not surprising since the measurement derives from the human body. In Naples there is a bronze bench with 'animal legs' which is not one-sided.²⁵⁹

Legs of benches in the form of stylized animal legs were a widespread phenomenon in the Roman period, as can be gathered from the many *scholae*, mainly marble, which are found (amongst other places) in Pompeii and Ostia. At each end of these *scholae* (which are semi-circular benches) there is a single sculpted leg, usually identifiable as that of a griffin (fig. 6). These legs are much more naturalistic than their wooden equivalents from Herculaneum,

²⁵⁷ Casa dell'Erma di Bronzo, room 5, 22-10-1928, inv. E. 331.

²⁵⁸ In terms of construction these belong to the very common 'Seitenstollenkonstruktion' group, as defined by Grodde (1989, 51 Abb. 21 C). An example is a small stool from Bodenhagen, cf. Grodde 1989, 287 Kat. 303, 402 Taf. 16.2.

²⁵⁹ Naples, Museo Nazionale inv. 73017; the bench comes from Pompeii, cf. Richter 1966, 104 and fig. 528.

showing many more anatomical details and sometimes even the griffin's wings.²⁶⁰ The same animal leg form is found in footstools and in the supports of bronze and marble rectangular tables. It is of Greek origin and also appears in Etruria.²⁶¹

The Latin term for bench is *subsellium* or *scamnum*.²⁶² From the context of references in the written sources we can deduce that *subsellium* was a general term for a very common piece of furniture. It is mentioned as seating for parasites and for senators, in theatres, in public baths and in courtrooms.²⁶³ In the *Digesta* (Paulus, 33.10.3) *subsellia* appear as part of the household furnishings. From later sources we learn that *cathedrae* (chairs with backrests) were used by persons of dignity, who thus distinguished themselves from those who took their places on *subsellia*.²⁶⁴ In general we should imagine these *subsellia* as simple pieces without arm- or backrests.²⁶⁵ A *scamnum* was probably even simpler, not least because the term is more often used to denote a footstool.²⁶⁶ Possibly *scamnum* would have been the correct term to use for items like the Herculaneum benches.

Jacobi has described a small wooden bench found in the *castellum* at Saalburg.²⁶⁷ Here four plain, round legs are let into the seat at an angle. It represents a type entirely different from the three Herculaneum pieces.²⁶⁸

3.4.2 Stool

The preserved stool (cat.no. 23; figs. 123-126) has a very basic form. The square seat sits upon four, straight, undecorated legs which are tied together by two sets of four rungs. The dimensions are (l. x w. x h.) 46 x 46 x 44 cm. (c 1½ x 1½ x 1½'). All the joints in the stool are mortise-and-tenon joints. Both the form and the construction are so simple that there is no

²⁶⁰ Examples are the *schola* on the Foro Triangolare and the tombs of Veius and the Istacidii outside the Porta di Ercolano in Pompeii, cf. Mau/Kelsey 1902, 136; Mau 1908, 429, figs. 253 and 431, fig. 254; for the 'tombe a scuola' or *exedrae funerariae* see Pozzi 1960, passim; Kockel 1983, 18-22; Von Hesberg 1992, 164-170. Ostia: travertine *schola* outside the Porta Marina, cf. Richter 1966, fig. 529. Comparable forms are found in the ends of benches in the small theatre in Pompeii, cf. Pozzi 1960, 184. For marble bench supports see Cohon 1985, 433-439, appendix 4: he lists 14 Greek and Roman examples. Also worth mentioning in this respect are the two bronze benches with cow's legs and heads, donated by M. Nigidius Vaccula to the Forum baths at Pompeii, cf. Fiorelli 1862, 117-118; Mau/Kelsey 1902, 205. In view of his *cognomen* Vaccula (*vacca* = cow) the form of the legs is not surprising.

²⁶¹ For tables with this kind of support see Cohon 1985, passim. An Etruscan footstool: Allard Pierson Museum, Amsterdam, inv. 11.342, cf. Brijder 1987, 67-74. For Greek precursors from Delos: Deonna 1938, 12-14 and Pl. VII-IX, nos. 61-73. Etruscan forms: Steingraber 1979, 54 ('Form 2'); example: a depiction on an cinerary urn from Volterra, Museo Guarnacci inv. 197, cf. Steingraber 1979, 54 and 247 Kat. 254 and Taf. XIV 3. In Greece we see the form mainly in marble seats of honour from the Hellenistic theatre and in sanctuaries such as the *Amphiareion* in Attica, cf. Richter 1966, 48 and figs. 270-274; Travlos 1988, 302 and 317 Abb. 400.

²⁶² Cf. Hug 1932, 503-504; Chapot 1911, 1551.

²⁶³ Parasites: Pl., St. 488-489 and 703; id., Capt. 471; senate: Cic., Catil. 1.16; Cic., de Orat. 2.143; Cic., Phil. 2.19; Cic., Phil. 5.18; Liv. 3.64.6; Liv. 42.33.1; Suet., Aug. 44; Suet., Claud. 23, cf. Cassius Dio 42.20.3 and 57.7.6; theatre: Iuv. 7.45; Pl., Am. 64-66; Pl., Poen. prol. 4-6; Vit. 5.6.3; public baths: Mart. 5.8.2; id. 5.27.3; courtrooms: Cic., Brut. 290; Cic., Clu. 111; Cic., Fam. 3.9.2; Cic., Fam. 13.10.2; Cic., de Orat. 1.264; Cic., S.Rosc. 6.17: ..., *quorum alterum sedere in accusatorum subselliis video* (... one of whom I see sitting in the plaintiffs' benches.); Cic., Ver. 2.2.73; Plin., Ep. 6.33; Quint., Inst. 6.1.39; Quint., Inst. 11.3.132; Quint., Inst. 12.3.2.

²⁶⁴ Ambrosiaster, in Epistulas ad Corinthios 1.14.31: *Seniores dignitate in cathedris, sequentes in subselliis, novissimi in pavimento super mattas*. (The elders on chairs according to dignity, the followers on benches (*subsellia*) and the youngest on mats on the floor.); Isid., Orig. 20.11.9: *Subsellia verum ceterorum, cathedrae doctorum*. (The benches are for the rest, the chairs for the teachers.).

²⁶⁵ An exception seems to be cited in the text of Dig. 33.10.5 praef., in which *subsellia cathedraria* appear. Benches with backrests are probably meant here.

²⁶⁶ See Mart. 5.41.7; Ov., Ars 1.162; Ov., Fast. 6.305-306; Prop. 3.3.19; V.Max. 4.3.5.

²⁶⁷ Jacobi 1897, 433 and Abb. 66 Nr.1.

²⁶⁸ In the Fullonica of Stephanus on the Via dell'Abbondanza in Pompeii (I 6, 7) stands a plaster replica of what was probably a bronze bench. The flat legs have received floral decorations. Their form is derived from classical Greek furniture forms. Nothing is known about either the original or the origin of this piece.

need to look for a model.²⁶⁹ The form appears on various depictions (for example, on a relief from Ostia in the Museo Nazionale delle Terme in Rome, in which one of the two featured shoemakers sits on a just such a stool).²⁷⁰ What makes the Herculaneum example particularly interesting, however, is the seat, which is decorated with an eight-pointed star in wood mosaic and edged by a triple receding moulding. The wood in the mosaic is not the same as that used in rest of the stool. The decoration makes this otherwise simple piece the most ornate of the seating which has survived from Herculaneum.

The simplicity of many stools is also apparent from written sources which refer to them (notably in connection with craftsmen) simply as *sella*.²⁷¹ More expensive stools are usually specified by the addition of an adjective, as in *sella eburnea* or *sella curulis*.²⁷²

3.5 Storage furniture

Fifteen pieces of storage furniture have survived in Herculaneum. They cover a wide range of forms but can be roughly divided into four groups:

1. cupboards (free-standing or hung storage pieces with doors) (6);
2. *aediculae* (or household shrines) in temple form (4);
3. racks (free-standing or hung storage pieces without doors) (4);
4. chests (free-standing storage pieces with lids) (1).

Shelving should also be mentioned in this context. As today, supports were fixed to the wall to carry shelves. One example is found in room A on the upper floor of the Casa del Bicentenario (V 15).²⁷³

3.5.1. Cupboards

The six pieces classed as cupboards - free-standing or hung storage pieces with doors - vary greatly in size, form and finish. Virtually no common features can be identified beyond the fact that all could be closed by means of one or two doors.²⁷⁴ Some pieces combine wood with other materials: there are hinges and locks in bronze and iron, and hinges in bone and metal. One example (cat.no. 40; fig. 166) has a drawer. In another case a wall cupboard is formed by hanging a pair of small doors in front of a niche which is plastered on the inside (cat.no. 38; figs. 161, 164). Cupboards could thus be built-in as well as free-standing.²⁷⁵

²⁶⁹ Structurally the stool belongs to the so-called 'Zargenbauweise' category as defined by Jahn (1990, 18 and 490 and Abb. 1b). Similar Greek forms can be seen, for example, in a terracotta statuette from Myrina now in the Louvre (inv. Myr. 22, cf. Richter 1966, 47 and fig. 269), in a depiction on an Apulian volute krater (Naples, Museo Nazionale inv. 81394, cf. Richter 1966, 264) and on an Apulian amphora in Bologna (Museo Civico, inv. 568 [912], cf. Richter 1966, 265).

²⁷⁰ Sarcophagus of T. Flavius Trophimas, Museo Nazionale delle Terme, inv. 184, cf. Richter 1966, 103 and fig. 585; Giuliano 1981, 148-150, no. II 44; dating from the reign of Trajan; Amedick 1991, 115 and 149-150 Kat. 173, Taf. 117, 1 and 2 (dating from the beginning of the 2nd century). The same type of stool is depicted in the relief on the southern side of the tomb of M. Vergilius Eurysaces outside the Porta Maggiore in Rome, cf. Felletti Maj 1977, tav. XLI (111 a).

²⁷¹ Cic., Ver. 2.4.56; Dig. 9.2.11 praef. The resulting adjective *sellularius* indicates craftsmen: Apul., Fl. 9.25: *Sellularias ... artes* (Professions which are practised sitting [on stools]); Apul., Fl. 15.13: ... *inter sellularios artifices* (... between the craftsmen who practise their profession sitting [on stools]); Gel. 3.1.10; Liv. 8.20.6; Mart. 5.27.3. Finally, *sella* also appears in connection with prostitutes; Iuv. 3.134-135 and Pl., Poen. 264-268.

²⁷² Cf. Schäfer 1989, passim.

²⁷³ See appendix 1: 28-1-1938. We know from Mor. (Appendix Vergiliana) 19-21 that the term used for such a plank was *tabella*: *Inde abit adstititque molae parvaque tabella, / quam fixam paries illos servabat in usus, / lumina fida locat.* (After this he went away, took up his place by the millstone and set his trusty lamp on a small shelf which he had fixed to the wall for that very purpose.).

²⁷⁴ For the construction of Roman doors and a typology, see Righini 1965, passim, especially p. 401-413.

²⁷⁵ For a definition of cupboards, including built-in examples, see Budde 1940, 2 and Eames 1977, 12-54.

The only one of Herculaneum's cupboards (cat.no. 37; figs. 159-160) for which more or less exact parallels can be found (in Pompeii and Boscoreale) survives in Insula V 17 (fig. 7).²⁷⁶ A low base, slightly protruding around the front and sides, carries a simple structure. The sides, and probably the back, were built of thin vertical panels held between the corner uprights and two further stiles. At the front there are two doors which once turned on hinges now lost. The doors themselves each consist of a framing holding two panels, one above the other. The cupboard in the Casa a Graticcio (cat.no. 36; figs. 157-158) is very similar but was probably closed with a single door. One bone hinge-segment is all that remains of this door. The cupboard in V 17 was divided into three by two shelves, while that in the Casa a Graticcio had a single shelf. It is interesting to note that the lowest shelf of the cupboard in V 17 could be separately closed by two small inner doors. We can no longer see if the same was true of the Pompeii and Boscoreale examples, because the cast gives only the impression left by the outside of the cupboard. The description of another cupboard, found in room 8 of the Casa a Graticcio and now lost, suggests that it was of the same type.²⁷⁷ A very similar piece is depicted on the Simpelveld sarcophagus (fig. 10).²⁷⁸

The other four preserved cupboards are different in form and much smaller than the above pieces. One of them, that in the Casa del Bicentenario (cat.no. 39; figs. 162-163, 165), has been the subject of a heated discussion in the archaeological literature. A 'cross' found on the wall above the piece was long thought to imply a Christian altar, but since publications by L. Falanga and R. de Kind it has been generally accepted that only a simple cupboard was involved. The 'cross' is merely the impression left by a shelf.²⁷⁹ Although D.G. Orr (1980, 197, no. 22) accepts this interpretation, he still includes the piece in his 'Corpus B' of household shrines. The piece rests on four straight legs. The sides and the back are constructed from framings which hold loose panels. The front is likewise panelled but has a small square door in the middle. A raised rim runs around the sides and back of the cupboard top. A cupboard (storing shoes) with just such a rim is depicted on a sarcophagus relief from Ostia, now in the collection of the Museo Nazionale delle Terme in Rome.²⁸⁰ Both this example and the Herculaneum cupboard are simple storage pieces, the raised edge providing extra space on the top.

In the Casa della Gemma (*Insula Orientalis* I 1) part of a small wall cupboard was found with the remains of a shelf inside (cat.no. 38; figs. 161, 164). The door has not survived, but is described in the excavation reports.²⁸¹ A similar wall cupboard, albeit much larger, was

²⁷⁶ Boscoreale: cupboard found in the Villa di Contrada Pisanella. During the excavation a cast was made of the impression left by the cupboard in the volcanic material. It is described by Pasqui (1897, 411-413 and fig. 6) and Budde (1940, 15 Kat. 4 and Abb. 6): height 1,70 m., width 0,94 m. and depth 0,71 m. According to Pasqui the structure of the wood indicates chestnut. The hinges were of bone. The cupboard had four shelves. This example is also discussed by Richter (1966, 115). Pompeii: as far as I know this cupboard has never been published; the cast of it was set up in the Antiquarium at Pompeii and was probably lost during the bombardment of Pompeii in the 2nd World War. This can be assumed from a photograph of it in the photo archive at Pompeii (neg. A 9599) upon which a note reads: 'Armadio pianificato esposto nel vecchio museo, e distrutto dalla guerra.'

²⁷⁷ See appendix 1: 27-9-1928: h. 1,17 m.; w. 0,60 m. and d. 0,47 m. Three other lost cupboards may also have been of this type: see appendix 1: 2-11-1933; 10-2-1938; 18-3-1938.

²⁷⁸ Cf. Holwerda 1931, 31 and 1933, 68; Budde 1940, 18-19 Kat. 16 and 63 Abb. 8; Liversidge 1955, 64-66; Richter 1966, 116 and fig. 586.

²⁷⁹ Falanga 1981 gives a summary of the discussion regarding the so-called 'cross of Herculaneum' and the shrine which was supposed to have been found in the same room. He also gives an extensive bibliography; cf. also Jashemski 1987, 42 fig. 16 (two casts of shelves from Boscoreale); De Kind 1990; see also the bibliography given with cat.nr. 39. It is surprising to note that De Bruyne (1944, 287-302) had already made an accurate reconstruction of the so-called 'cross' as a cupboard shelf. He calls the piece (1944, 305) a 'comune armadio'.

²⁸⁰ This is the sarcophagus of T. Flavius Trophimas, Museo Nazionale delle Terme, Rome inv. 184, cf. Budde 1940, 17 Kat 14 and Abb. 7; Giuliano 1981, 148-150 no. II 44 (dated in the reign of Trajan); Amedick 1991, 115, 149-150 Kat. 173 and Taf. 117. De Bruyne (1944, 305) also makes this comparison.

²⁸¹ See appendix 1: 22 March 1934.

found in the Casa di Siricus in Pompeii (VII 1, 47), where a pair of notches for shelves can still be seen in the plaster.²⁸²

The sides of another small cupboard (cat.no. 40; fig. 166) also display the familiar construction of framing and panels. On the front are two small doors with wooden hinges and an iron lock,²⁸³ and above them a drawer, the front of which has survived. A cupboard described in the 19th century excavation reports had the same structure - two doors at the bottom with a drawer above - but was on a somewhat larger scale.²⁸⁴ All that has survived of another cupboard, hung in room 1 on the upper floor of the Casa a Graticcio (cat.no. 35; fig. 156), is the back panel, and thus we can only guess at the original form. A third of the way up this panel there is a horizontal batten, suggesting that the cupboard had a drawer at the bottom.

The excavation reports mention two other cupboards. One was very narrow (1.02 m. high; 35 cm. wide and 25 cm. deep) and had two doors.²⁸⁵ The other was roughly the same size and shape as a modern sideboard, and despite being thoroughly described in the excavation reports has nonetheless been lost.²⁸⁶ Both the preserved and the lost examples indicate that there were many different forms of cupboard in Herculaneum. The frequent references to bone hinge segments in the reports suggest that many more were found in fragments in the course of the excavations (see appendix 1).

The casts of cupboards from Pompeii (see appendix 3) resemble the wooden examples from Herculaneum only slightly. Frames with panels, bone hinges and mouldings are recurring features in both places.²⁸⁷ However, except for the two examples first mentioned, the Pompeii casts are much larger. Good examples are found in the Casa dei Cerere (I 9, 13; figs. 183-184 and 200 E-G), in the *atrium* of the Casa dei Ceii (I 6, 15; figs. 181 and 200 B-C) and in the *peristylum* of the Casa di Iulius Polybius (IX 13, 1-3; fig. 199).²⁸⁸ No cast was made of a large cupboard found in the *atrium* of the Casa del Fabbro (I 10, 7) in Pompeii, but we do have an extensive description of it. Here lattices rather than panels were fitted into the framing of the two doors. There was a further framing under the doors holding four panels and a moulding at the top of the cupboard.²⁸⁹ The range of possibilities is further extended by a wall painting in the Casa dei Cervi in Herculaneum. This depicts cupids as shoemakers and shows a cupboard with two folding doors divided into panels. It stands on a base not unlike the Herculaneum benches: two supports with S-shaped curves on the front carry the cupboard floor (see

²⁸² Cf. Fiorelli 1873, 11; Budde 1940, 29.

²⁸³ For cupboards with locks see also Dig. (Ulpianus) 32.1.52.9.

²⁸⁴ See appendix 1: 14-5-1869.

²⁸⁵ See appendix 1: 17-2-1928.

²⁸⁶ See appendix 1: 17 and 22-11-1939 (Casa dei Due Atri).

²⁸⁷ Grodde (1989, 150) calls the panel construction: 'Rahmenbauweise'.

²⁸⁸ For the cupboard in the Casa dei Ceii cf. Budde 1940, 15 Kat. 5: he gives the measurements as: height 1.80 m., width 1.70 m. and depth 1.00 m.; also: Casa del Menandro, cf. NSc 1929, 420 and Budde 1940, 15 Kat. 6-9: height 1.00 m., width 0.5 m., depth 0.38 m.; see also appendix 3 below. For the cupboards in the Casa di Iulius Polybius: cf. De Franciscis 1988, 21: 'Sotto il portico orientale erano quattro cassoni o armadi lignei, dei quali si è potuto recuperare sia l'aspetto col sistema del calco in gesso, sia alcuni elementi applicati in bronzo (serrature, anelli) e in osso lavorato (rivestimenti di cerniere). Essi contenevano vasellame di vetro e di argilla e, cosa più importante, il sigillo con il nome di C. Iulius Philippus.'

²⁸⁹ Elia 1934, 292-293 and fig. 13; Budde 1940, 14-15; Felletti Maj (1940, 48). The height is 2.20 m. and the width 1.38 m. It is possible that such a lattice in a door was indicated by the term *clathrata* 'filled with a lattice', which is used by Vitruvius (4.6.6) (cf. Fensterbusch 1991, Anm. 242, emended by Krohn). The archive material on the excavation of Pompeii informs us that cavities left in the volcanic material by the wood of decayed cupboards were found on more occasions. Sometimes the measurements were taken, as in two cupboards found in the Casa di Epidius Rufus (IX 1, 20) on 16 and 19-2-1866 (Giornale dei soprastanti): height 2.30 m., width 1.50 m., depth 0.50 m., cf. Dwyer 1979, 65, note 14 and 15; see also Pompeii, Casa del Criptoportico (I 6, 2): a cupboard was found against the east wall of the *atrium* with diamond lozenges inlaid in bone, h. x w. x d.: 1.00 x 0.50 x 0.38 m., cf. NSc 1929, 422. Budde mentions (1940, 16 Kat. 10-11) two further casts of the sides of cupboards in the Antiquarium in Pompeii, which we have not been able to trace. These were presumably lost during the 2nd World War.

§ 3.4.1).²⁹⁰

Although the preserved cupboards represent only about a third of the storage furniture found in Herculaneum, they provide enough evidence for us to conclude that there was a wide variety of free-standing and hanging storage furniture with doors. This in turn implies small workshops whose production was based on the personal wishes of the customers. There are no signs of serial production. Similar forms, when they do occur, may well have come from the same workshop or might simply represent a general type.

To judge from their Latin name, *armarium*, cupboards were originally used to store tools (*arma*), as the written sources suggest.²⁹¹ We also find them mentioned as storage for all sorts of objects, such as clothing, food, money, tools, toilet articles and books.²⁹² The term *armarium* was probably also used for racks (see § 3.5.3).

There has been a heated discussion in the archaeological literature about the origin of the cupboard as a piece of storage furniture. This has narrowed to the question of whether or not the cupboard is a Roman invention. Both sides of the argument appeal to the same archaeological evidence: the storage furniture depicted on terracotta plaquettes from the 5th century B.C. found in Lokroi Epizephyrioi. Some authors believe that cupboards are portrayed here, from which they conclude that such items could have existed in the Greek world. At the moment it is generally accepted that these are not cupboards, but chests (i.e. storage furniture opened from above with a lid) and that the fronts of these pieces are not doors but decorative panels.²⁹³ In order to demonstrate the existence of cupboards before the Roman period, E.G. Budde (1940, 34-41) cites Egyptian chests or shrines for statues of the gods, which were carried upright in processions. This, however, should be understood as a custom local to the Fayum; portable shrines have had no influence on the development of the Roman cupboard.²⁹⁴ One is struck by the fact that there is no word for cupboard in classical Greek, and it may be worth mentioning that one of the words for cupboard in modern Greek, '*armari*', is clearly derived from the Latin.

Cupboards seem only to have appeared in the 2nd century B.C.. There is no evidence of their presence in Hellenistic Greece.²⁹⁵ The large number of cupboards in Herculaneum and Pompeii gives the lie to the argument that such furniture was little used in the Roman period.²⁹⁶ It also suggests that cupboards had become extremely popular in the first two hundred years of their existence.

3.5.2 *Aediculae*

The four wooden *aediculae* all echo the facade of an Etruscan-Italic temple. A small *cella* with two columns *in antis* stands on a podium (figs. 137-147). In three cases the columns have

²⁹⁰ Museo Nazionale Naples inv. 9179, cf. Budde 1940, 22 Kat. 22 and p. 65 Abb. 12; Richter 1966, 81 and 111 and fig. 420; Tran Tam Tinh 1988, 63 no. 18 with bibliography.

²⁹¹ Cato, Agr. 11.31; Pl., Capt. 918. Cf. Budde 1940, 3.

²⁹² Clothing: Hieronymus, Epistulae 22.32; Plin., Nat. 29.101; food: Pl., Capt. 918; money: Cic., Clu. 64.179 and Cael. 21.52; Pl., Epid. 308; tools: Isid., Orig. 15.5.4 *Armarium locus est ubi quarumque artium instrumenta ponuntur*. (*armarium* is a place where tools of all trades are placed); toilet articles: Pl., Men. 531; SHA (Vopiscus), Tacitus 8.1; see also § 5.5.4.

²⁹³ Budde (1940, 9-12) calls them cupboards, and dates their appearance to the 5th century B.C., as does Laser (1968, 68); we find the chest argument in: Quagliati 1908, 226-227; Richter 1926, 92-93; Pritchett 1956, 222-224; Richter 1957; Richter 1965, 111; Richter 1966, 82 and figs. 386-389; Prückner 1968, 51 and 85; Brümmer 1985, 76 and Anm. 334. See also Reincke 1935, 500.

²⁹⁴ For these chests see also Parlasca 1991, 117-123.

²⁹⁵ Cf. Richter 1926, 144 and 1957, 423. The oldest texts in which the word appears are: Pl., Capt. 918; id., Epid. 308-309; id., Men. 531-532; Var., L. 5.128. This indicates that this type of furniture must have been in use in the 2nd century B.C.. Richter (1966, 79-81 and 115-116) argues for its appearance during Hellenism, but there is no evidence for this.

²⁹⁶ Cf. Reincke 1935, 501: 'Eigentliche Schränke im heutigen Sinne sind dagegen auch für die römische Zeit nicht nachzuweisen.' Feulner 1930, 13 and 1980, 15: 'Die Kastenmöbel spielten im Altertum eine nebensächliche Rolle, weil sie unnötig waren.'

survived; in cat.nos. 29 and 30 (figs. 142, 147) they are fluted with two *tori* at the base, while in cat.no. 28 (fig. 138) the base is missing and the shafts are plain. All three sport Corinthian capitals; in one case these are marble and show traces of red paint (cat.no. 30), in the other two they are wooden.²⁹⁷ Three of the four are crowned with a pediment,²⁹⁸ while the fourth, the *aedicula* in the Casa del Sacello di Legno, carries only an entablature (fig. 143). This variant, without pediment, is also found in two masonry *aediculae* in Pompeii.²⁹⁹ The *cella* of two of the pieces (cat.nos. 28 and 29; figs. 138, 142) could be closed off with two folding doors.³⁰⁰ The other two presumably had doors as well. Maiuri (1941A, 401, note 19) makes a single reference to another wooden *aedicula*, reputedly found on the upper floor of house V 11. This piece has not survived.

The *aediculae* are all expertly made. This is very visible in the finishing of the *cella* doors and the pediments, which carry mouldings throughout. The capitals too reveal how well the cabinetmakers knew their trade. These facades provoked a value judgement from Orr (1978, 1585): 'The overall effect of these wooden house shrines is one of traditional grandeur without ornamental embellishment. They contrast sharply with the brilliant mural decoration which occasionally surrounds them.'³⁰¹ One wonders, however, whether in antiquity, with their colour (witness the red capitals in cat.no. 30), wood mosaic (as in cat.no. 29) and carving still intact, their contrast with their surroundings was quite as extreme as Orr supposed. Although there are similarities in their essential form, these four examples demonstrate that wide variation was possible in the detail.³⁰²

All the *aediculae* were reconstructed after discovery and strengthened with wooden or metal additions. In the example from the Casa del Salone Nero (cat.no. 30) the old frame was replaced by plexiglass in 1987. In that from the Casa del Sacello di Legno (cat.no. 29) some parts have been replenished.

Although there are no comparable wooden pieces outside Herculaneum, the masonry *aediculae* found in both Herculaneum and Pompeii exhibit many similarities. Household shrines were a fixed part of the appointments in many of the houses in both towns. Sometimes these were simple niches cut in the wall whose function is clear from the paintings in and around them (snakes, gods etc.); sometimes they are masonry structures in the form of small temple facades built into the wall. G.K. Boyce, who produced a catalogue of Pompeian household shrines in 1937, regarded two elements as common to all shrines: 'the representation of the images of the gods to be worshipped in them and the provision for sacrifice before these images' (Boyce 1937, 10).³⁰³ While the wooden *aediculae* in Herculaneum meet the first requirement (see § 5.5.4), there is no evidence for the second. Portable *arulae* may have been

²⁹⁷ In the masonry shrines in Pompeii the columns are generally of the Doric order, but very often have bases and as Boyce (1937, 14) puts it: 'do not conform strictly to the canonical type; in a few instances they are of a more ornamental form resembling Corinthian.' Boyce mentions four examples with Corinthian capitals: in houses VI 2, 22 (Boyce 1937, 44 no. 142 and pl. 35.2); VI 7, 3 (Boyce 1937, 47 no. 160 and pl. 6.3); VI 15, 2 (Boyce 1937, 54 no. 211 and pl. 30.2); Boyce 1937, 81-82 no. 402 and pl. 9.1.

²⁹⁸ In cat.nr. 27 (fig. 137) only this element has survived.

²⁹⁹ Boyce includes these in his catalogue; Boyce 1937, 74 no. 343 and 81-82 no. 404 (pl. 34,3). The former is in house VIII 2, 16, the latter in house IX 2, 26.

³⁰⁰ Isidorus of Seville (Orig. 15.7.4) describes this type of door: *Sed fores dicuntur quae foras, valvae, quae intus revolvuntur, et duplices complicabilesque sunt.* (Doors which open outwards are called *fores*, and doors which open inwards and are folding and double are called *valvae*.) A passage which refers to the closed doors of a household shrine is found in Prop. 4.3.53.

³⁰¹ This is almost literally translated, without acknowledgement, by Dubouardieu 1989, 72. The wooden *aediculae* in Herculaneum are briefly dealt with by Orr 1980, 128-130, 194-199, nos. 17, 23, 26 and 30.

³⁰² Another piece of furniture is worth mentioning in this regard. The form of this piece is not described but the find of a large number of statuettes of the gods suggest that it may have served as a household shrine: see appendix 1: 24-9-1928, 4-10-1928, 9 and 17-11-1928.

³⁰³ For the *aediculae* in Pompeii see: Boyce 1937, 10-17; Boyce (1937, *passim*) discusses three different types which are found in Pompeii, as does Orr 1978 and 1980; Fröhlich 1991 deals with the painted versions; see also Hug 1925, 794-795; Saglio 1877, 92-95. In his *Corpus B*, Orr (1980, 193-202) also gives the non-wooden household shrines in Herculaneum.

used, as Fröhlich (1991, 21) proposes for niches where no provision for offerings can be found.

The example in the Casa del Sacello di Legno has a base in the form of an ordinary cupboard; in the *aedicula* itself small statuettes of gods were found, including a bronze figure of Hercules and a marble figure of a goddess, possibly Venus.³⁰⁴ The upper and lower sections are separated by a sharply protruding moulding. This carries a frieze upon which is a meander design in wood mosaic. Such decoration was presumably not uncommon; we see much the same thing in the plastered masonry shrine in the *atrium* of house IX 1, 7 in Pompeii.³⁰⁵ Although only one example of a combined cupboard/*aedicula* has so far been found, there are two arguments which suggest that such pieces were quite common. Firstly, we see a similar example depicted on a wall painting in the *predella* of the east wall of room q in the Casa dei Vetti in Pompeii (fig. 8). Here we see crockery in the bottom section and a statuette of Venus in the top section.³⁰⁶ Secondly, a passage from Petronius' *Satyricon* (29.8) is consistent with the two archaeological examples: *Praeterea grande armarium in angulo vidi, in cuius aedicula erant lares argentei positi Venerisque signum marmoreum et pyxis aurea non pusilla ...* (Moreover I saw a large cupboard in a corner and in its *aedicula* stood silver Lares, a marble statuette of Venus and a golden *pyxis*, not such a little one either). It is quite clear that part of the cupboard mentioned in this passage did service as a shrine.³⁰⁷ The fact that Petronius here mentions an *aedicula* without any further explanation would seem to indicate that this sort of furniture was generally known. It is therefore quite reasonable to assume that the cupboard in Herculaneum is an example of a widely distributed type. Its multi-functional character can perhaps be explained in terms of economic use of space. It stood in a very small room, which also had to accommodate a small round table and a bed. The other wooden *aediculae* may have stood on similar bases, even if not permanently attached to them. When we consider that the lower section of the piece in the Casa del Sacello di Legno measures 94 cm. high and that the bases of the masonry *aediculae* at Pompeii were about 1 m. high,³⁰⁸ we can assume a similar height for the shrines for which no bases have survived. The centre of the *aedicula* would thus have lain at eye level. As an alternative to a cupboard-type base, one might imagine an arrangement in a niche or on a shelf fixed to the wall. A masonry example of the latter is found in house VI 15, 23 in Pompeii.³⁰⁹

In the modern period the term generally used for household shrines has been *lararium*.³¹⁰ However, when we look more closely at texts which make clear reference to such shrines this seems not to be correct. On only one occasion does *lararium* indicate a household shrine, and this in a gloss, possibly from late antiquity or the early Middle Ages. Here the form is not specified, nor is it clear whether a room or a shrine is meant.³¹¹ In other, older, texts the

³⁰⁴ For the contents of the piece see appendix 1, the excavation reports for 17 and 19 March 1934. For more on this piece see Mols 1993A, 14-17.

³⁰⁵ Cf. Boyce 1937, 79 no. 381 and pl. 6.1.

³⁰⁶ Cf. Mau/Kelsey 1902, 333; Richter 1926, 143 and fig. 340; Budde 1940, 21-22 Kat. 21 and 64 Abb. 1; Richter 1966, 81 and fig. 419 (she mistakenly regards the piece as Hellenistic); Moormann 1988, 185 cat. 217/9.

³⁰⁷ This text has been used before in relation to this piece in Herculaneum: Budde 1940, 13; Maiuri 1945, 155-156; Richter 1966, 115; see also Orr 1978, 1576 and Fröhlich 1991, 26; the connection is not made by Dubourdieu 1989, 74. In note 129 Orr (1978) further compares the passage with a depiction in the Simpelveld sarcophagus, now in the Rijksmuseum van Oudheden in Leiden: 'A Roman sarcophagus in the Leyden Museum has a good representation of a cupboard household shrine executed in low relief on the inside face of the sarcophagus'. There are absolutely no grounds, however, for taking one of the cupboards portrayed there as a shrine (see below fig. 10).

³⁰⁸ Cf. Boyce 1937, 14.

³⁰⁹ C. Boyce 1937, 56 no. 219 and pl. 15, 1 and 2.

³¹⁰ See for example Boyce 1937, passim; Orr 1978 and 1980, passim.

³¹¹ Scholiast on Verg., A. 12.199 (cf. Thilo/Hagen 1887, 524): *Diri sacraria ditis. Inferorum dicit secreta, quae nominari non possunt et sacrarium est locus, ubi praecluduntur quae nolumus proferre, ut in templis, et donaria, ubi dona reconduntur et lararia, ubi Lares Penates habitant.* (Sacraria of the baleful god of the underworld. He points to the secrets of the

term *lararium* always denotes a room in a house or palace.³¹² The term is therefore better avoided whenever a household shrine is meant. The word *aedicula*, on the other hand, does appear in this sense.³¹³ We therefore side with P. Boyancé (1952, 112) and A. Dubourdieu (1989, 73) who argue for the use of the term *aedicula* whenever the subject is Roman household shrines.³¹⁴ Fröhlich (1991, 25-26) makes no choice between the different terms, although he too observes that both *lararium* and *sacrarium* appear to refer more to rooms than to furniture or niches.³¹⁵ P. Stuart has shown that the notion of *aedicula* can also include a niche.³¹⁶ It is therefore reasonable to assume that the classical Latin term for all household shrines was *aedicula* and that it applied to both free-standing, temple-shaped examples and to niches surrounded by paintings.

The *aediculae* in Herculaneum belong to a group of storage furniture from antiquity which is characterized by a pediment facade. Besides household shrines, this group contains cupboards where portraits of ancestors were set up,³¹⁷ cupboards in which imperial laws and decrees (the so-called *notitia dignitatum*) were kept,³¹⁸ Jewish Torah cupboards³¹⁹ and early Christian Bible cupboards.³²⁰ Finally we must mention a wall painting in the Casa delle Nozze di Ercole in Pompeii (VII 9, 47) upon which a miniature temple is portrayed on a litter.³²¹ These formal resemblances reflect the cultic or religious function of all these types of furniture.

underworld, which cannot be named. *Sacrarium* is a place where we lock up that which we do not wish to show, as in temples; *donaria* are where gifts are stored and *lararia* are where the *Lares* and *Penates* [household gods] live.). According to Thilo/Hagen (1887, XII) we are here dealing with the 'grammatici incerti glossae ad Vergili Aen. XII pertinentes, quas Barthius adversar. XXXIII 13 ex codice quodam 'antiquissimo' edidit'. The precise date of the gloss is thus unknown. It is not included in the Corpus Glossariorum Latinorum.

³¹² SHA (Lampridius), Alexander Severus 29.2; id. 31.4-5; SHA (Vopiscus), Tacitus 17.4.

³¹³ In Tib. 1.10.20 an *aedicula* is described as a small *aedes*: ... *stabat in exigua ligneus aede deus* ... (in a small shrine stood a wooden deity). In Cicero, Ver. 2.4.27 and Dig. (Ulpianus) 1.8.9.2, the term *sacrarium* is associated with a household shrine, but this too can be seen as a room and not as a piece of furniture (cf. Dubourdieu 1989, 65 and 71; Fröhlich 1991, 26).

³¹⁴ According to Orr (1978, 1576) the word *aedicula* indicates only one type of household shrine. Such refinement of the meaning seems rather far-fetched, however.

³¹⁵ For the gods which were worshipped in household shrines see Fröhlich 1991, 22-26 with bibliography.

³¹⁶ Stuart 1981, 54. See also Fishwick 1993, 238.

³¹⁷ Cf. Budde 1940, 46-49 and Abb. 44-48: these are all depictions on grave reliefs of an *aedicula* containing a wax bust of the deceased; these *aediculae* have doors. An important written source for this is Plinius, Nat. 35.6: *Aliter apud maiores in atriis haec erant, quae spectarentur; non signa externorum artificum nec aera aut marmora: expressi cera vultus singulis disponebantur armariis*. (Otherwise these things stood in our ancestors' *atria*, set up so that they could be seen; these were not statues by foreign artists, neither in bronze nor marble; wax masks stood there, each in its own cupboard.). Other written sources use the verb *aperire* (to open) in connection with *imagines*. This must refer to the cupboards in which the images stood, which were apparently opened on special occasions. Relevant texts are: SHA (Vopiscus), Tacitus 19.6: *Tantum illud dico senatores omnes ea esse laetitia elatos ut in domibus suis omnes albas hostias c<a>ederent, imagines frequenter aperi<r>ent, albat sederent, convivia sumptuosiora praeberent, antiquitatem sibi redditam crederent*. (I only say this: all the senators were so wild with joy that that they killed all the white sacrificial animals in their houses, frequently opened the cupboards with the images of the ancestors, sat in white robes, organized very expensive meals and thought that for them the old times had returned.); Cic., Sul. 31.88: *Domus erit, credo, exornata, aperientur maiorum imagines, ipse ornatum ac vestitum pristinum recuperabit*. (His house, I believe, will be decorated, the cabinet with ancestors' portraits will be opened, he himself will get back his previous splendour and attire.); Sen., Contr. 7.6.10: *Indicit festum diem, aperiri iubet maiorum imagines, cum maxime tegendae sunt*. (He announces a feast day, orders the cupboards with ancestors' images to be opened, while they should really stay closed.). The cupboards with *imagines* probably stood in the *atrium*, as Pliny's text suggests. Other evidence comes from: Sen., Ben. 3.28.1-3; Sen., Consolatio ad Polybium 14.3; Mart. 2.90.5-6; id. 4.40.1-4; V.Max. 5.8.3.

³¹⁸ Cf. Wendel 1943, 278-281 and Wendel 1946, 1-12 (from 390 A.D. under Diocletian).

³¹⁹ Cf. Budde 1940, 41-46 and Abb. 30-42; Wendel 1950.

³²⁰ On the mosaic in the mausoleum of Galla Placidia in Ravenna the *codices* of the four evangelists lie in a cupboard with a gable roof (1st half 5th century A.D., cf. Budde 1940, 23-24 Kat. 24; Blanck 1992, 94 Abb. 66); depiction on a miniature in the *Codex Amiatinus* (6th century A.D.) in the Cistercian Monastery S. Salvatore di Monte Amiata near Siena, see: Budde 1940, 22-23 Kat. 23 and Abb. 13. There are also resemblances between *aediculae* and a local group of funerary monuments in the form of small prostyle temples from *Lilybaeum*. These always contain painted scenes in which a single person reclines to eat. They are dated in the 1st century A.D., cf. Gabrici 1929, 42-49; Tamburello 1981, 38 and 39 fig. 4.

³²¹ Cf. Della Corte 1924, 92-93 and tav. I; Moormann 1988, 198 cat. 254; Fröhlich 1991, 149 and Anm. 895 and 896 with bibliography.

We know little about the origins of the *aedicula*. It is not clear whether it was typically Roman or had been borrowed from the Greek world. There are indeed Hellenistic sources which point to household cults, but the form these took is not known. There are statuettes of gods from Priene and Delos, amongst other places, which may have stood in household shrines.³²²

Kusch (1960, 21) sees wooden *aediculae* as the forerunners of pillared Renaissance cupboards. Although there are certain similarities, the younger form is so closely linked to Renaissance architecture that an indirect influence via classical architecture is far more likely than a direct influence from the *aedicula*, no examples of which were known in Renaissance times.

3.5.3 Racks

Only four racks have survived in the shops of Herculaneum (figs. 148-155). All four were attached to the walls behind them, while three were also attached to the joists of the floors above (cat.nos. 31, 32 and 33; figs. 148-153). These three are very similar in appearance; a number of uprights are linked to the wall by a series of horizontal bearers which carry shelves. At the front of each shelf runs a board fitted on edge, with semicircular notches cut in the top to take the necks of amphoras.

The fourth rack (cat.no. 34; figs. 154-155) stands on the floor and looks very like a modern magazine rack: two uprights are connected by six rails. Transverse bearers at four levels are anchored in the wall behind, creating four shelves. Vertical partitions between the top three shelves create six compartments in two rows of three.

In Taberna IV 15-16 the shop's racks appear to have been cut through by an excavation shaft.³²³ Remnants of racks were also encountered in service rooms such as kitchens and storerooms but were subsequently lost.³²⁴

There are also signs of wall racks in Pompeii. One large and expensive example must have stood in the *Schola Armaturarum* (III 3, 6), its supports furnished with carved and gilded wooden capitals.³²⁵ Less ornate were a rack in the *ala* of house IX 5, 14 and another in the south-east corner of the *atrium* of house IX 5, 18-21.³²⁶ Racks were also found in a shop near the Porta di Ercolano.³²⁷ M. de Vos (1977, 38-41) gives a number of examples of holes for inserting timber bearers found in rooms with Fourth Style paintings. These bearers would probably have carried wall racks. Although few racks have survived, repeated references in the excavation reports make it clear that they were a very common feature in both Herculaneum and Pompeii. Given their usefulness, it is obvious that racks would have been widely used throughout the Roman world. The written sources do not tell us whether there was a separate word for them. It seems as if the term *armarium* was used for both cupboards and racks (see § 3.5.1).

³²² For this see Barr-Sharrar 1988, 66 and 67 note 84.

³²³ Cf. Maiuri 1958, 434.

³²⁴ See appendix 1: 7-2-1828 and from 7 to 14-2-1828 (first floor of the Casa d'Argo; 13-5-1869 (probably first floor of the Casa dello Scheletro); 9-6-1927 (first floor of the Casa dello Scheletro); 23-4-1928 (Casa del Tramezzo di Legno); 24-11-1930 (Casa dei Cervi, ground floor, room 3); 22 and 30-4-1934 (Casa della Gemma, room 3); 16-8 and 29-9-1939 (Casa del Salone Nero). Maiuri (1958, 260 and 472, nota 56) also mentions another example with four shelves in the Casa del Mobilio Carbonizzato, room 7.

³²⁵ NSc 1916, 429-430.

³²⁶ IX 5, 14: excavated in June 1878, cf. NSc 1878, 181-182; IX 5, 18-21: cf. Zevi 1964, 20 (quoted from the 'Diari di scavo' of 23-7-1878).

³²⁷ Found on 20-10-1770, cf. Fiorelli 1860, 245. Other examples from Pompeii are found in various so-called *apothecae*, including those in the Casa di M. Lucretius Fronto (V 4 a, cf. NSc 1901, 149) and those in the Casa dei Quadretti Teatrali (I 6, 11, cf. NSc 1929, 414). Also in *apothecae* in a Villa Rustica at Boscotrecase: cf. NSc 1921, 417 and 1922, 460.

3.5.4. Chest

Only one chest has survived in Herculaneum. It has a simple, rectangular form (cat.no. 41; figs. 167-171); 104 cm. long x 63 cm. wide x 48 cm. deep = c 3½ x 2 x 1½'). The four sides are attached to the base board, which rests on two supports across the full width of the chest. The front and side edges of the flat lid carry edging battens which protrude slightly when the chest is closed. Elements of a wooden hinge, constructed from cylindrical segments, are still visible at the back (see § 4.7.2). According to the typology of Greek chests drawn up by E. Brümmer (1985, 24 and 37-41), this example belongs to the 'einfache Kastenbau' type.³²⁸

The Herculaneum excavation reports make it plain that chests were found in many different places, although the descriptions given are generally sketchy. This suggests that such pieces were very common in the town.³²⁹ The measurements, when they are given, reveal that there was wide variation in size. The surviving chest is a middle-sized example.

Pompeii too has yielded many remains of chests, for some of which we know the measurements. These include those found in the Casa del Menandro (I 10, 4) and in the Casa del Criptoportico (I 6, 2-4).³³⁰ A unique example was excavated in Villa B at Oplontis. It was divided into nine compartments, seven of which contained a glass bottle (*unguentarium*). A. d'Ambrosio (1987, 176) has described it as 'quasi un beauty-case'.

The Latin term for chest is *arca*.³³¹ The written sources sometimes give details; that a case has a lock, for example.³³² Chests have been found elsewhere in the former Roman Empire, including a smallish one at Bradwell, Milton Keynes, in England.³³³ In most cases, however, only the metal fittings remain. This is discussed at greater length in § 4.7.1.

Chests are amongst the oldest known forms of furniture from the Mediterranean region³³⁴ and many similarities in form and construction are found throughout this whole area. They can be regarded as a general Mediterranean type, with the form derived from the function.³³⁵

³²⁸ In this case Grodde 1989, 138-139 speaks of: 'Kastentruhen' in contrast to the so-called 'Stollenbauweise', under which heading should be included the many chests with metal fittings which were found in Herculaneum and Pompeii (see § 4.7.1). This latter technique is extremely old. It appears in Minoan-Mycenaean chests, such as the sarcophagus of Hagia Triada, cf. Laser 1968, 7.

³²⁹ See appendix 1 for the following dates: between 1 and 7-2-1828 (upper floor Casa d'Argo); early March 1828 (upper floor Casa d'Argo); 9-3-1828; 5-5-1828 (upper floor Casa d'Argo); late september 1828 (upper floor Casa d'Argo, large example); 3-5-1928 (probably upper floor Casa Sannitica, l. x w. x d.: 1.00 x 0.55 x 0.55 m.); 21-10-1929 (first floor Casa dei Cervi); 14-2-1933 (first floor *Insula Orientalis* II 7); 31 March and April 1934 (first floor Casa del Sacello di Legno, three examples); 14-1-1935 (*Insula Orientalis* I 1a); 4-1935 (Casa del Rilievo di Telefo: l. x d.: 0.25 x 0.15 m.); 3-8-1936 (*Insula Orientalis* II 10); 1-9-1937 (first floor V 19-22); 1-10-1937 (first floor V 19-22); 3-11-1937 (first floor V 19-22); 6-11-1937 (first floor V 19-22, l. x w. x d.: 0.68 x 0.45 x 0.45 m.); 3-1938 (first floor *Insula* V 17, l. x w. x d.: 0.38 x 0.25 x 0.20 m.); 20-8-1938 (*Insula* V 11); 10-10-1939 (first floor Casa del Bicentenario, l. x w. x d.: 0.86 x 0.55 x 0.68); 2-6-1939 (Casa del Salone Nero, room C); 16-11-1939 (Casa dei Due Atri, divided into various compartments, l. x w. x d.: 1.45 x 0.80 x 0.50 m.); and finally, another chest found during excavations of the so-called *Decumanus Maximus*, cf. De Franciscis 1961, 325.

³³⁰ Casa del Menandro: in room 43 (cf. Maiuri 1932A, 210): 0.60 x 0.30 m.; the famous silver service was also found in two wooden chests (Maiuri 1932A, 219): 0.80 x 1.20 m. and 1.50 x 0.55 m.; a chest with bronze fittings (Maiuri 1932A, 246 and other examples in nota 16): 1.50 x 0.80 m.; two small chests (Maiuri 1932A, 457-459 and figs. 181 and 182): 0.70 x 0.32 x 0.32 m. (against the west wall of the *peristylum*, with lock and appliqué) and 0.35 x 0.24 x 0.21 m. (*oecus* 11, with two bronze handles). Casa del Criptoportico: east wall *atrium*: 0.78 x 0.55 x 0.60 m., cf. NSc 1929, 422-423.

³³¹ The various diminutives are given by Diomedes (Gramm. Lat. 1, 326): ... *arca*, *arcula*, *arcella*, *arcellula* ...; see also Fest. 23 L. and Isid., Orig. 20.9.3. For more passages see the Thesaurus Linguae Latinae.

³³² For example Titin., Com. 178; Verg., A. 2.258-259; Petr. 89.57; Claudianus, In Eutropium 192-196.

³³³ Cf. Musty/Manning 1977, 331 fig. 4: l. x w. x d.: 0.37 x 0.34 x 0.45 m. The various elements are joined together with dove tails. According to Musty the piece should be dated to the 1st or 2nd century A.D.. Another example comes from a late-Roman grave at Aquincum, cf. Burger 1984, 81 and 115 Abb. 46.

³³⁴ For Greek chests see Brümmer 1985, with extensive bibliography; for Etruscan chests: Steingraber 1979, 70-71.

³³⁵ Cf. Steingraber 1979, 123.

3.6 The library of the Villa dei Papiri

The library of the Villa dei Papiri in Herculaneum once contained cases of shelves for scrolls, remains of which are still being uncovered by assistants of the Soprintendenza Archeologica di Pompeii. One of the few descriptions of these cases comes from Camillo Paderni, curator of the museum in Portici, in a letter written (in poor English) to Thomas Hollis dated 12 December 1754: 'As yet we've only entered into one room, the floor of which is formed of mosaic work, not unelegant. It appears to have been a library, adorned with presses, inlaid with different sorts of wood, disposed in rows, at the top of which were cornices, as in our times'.³³⁶ We should imagine this library as a small, rectangular room of about 2.65 x 3.20 m. (c 10 x 12') with free-standing cases of shelves for scrolls along the walls and in the middle of the room. It is not known whether the cases had doors.³³⁷ A similar free-standing case can be seen on a relief, now in the Metropolitan Museum in New York, in which a doctor is depicted reading beside a cupboard (which in this case does have doors) containing scrolls (fig. 9).³³⁸ The large public libraries usually had shelved wall cupboards which could be closed off with doors.³³⁹ Good examples are the library on the Forum of Trajan in Rome and that in the Villa of Hadrian in Tivoli which is reconstructed in Rome's Museo della Civiltà Romana.³⁴⁰ V.M. Strocka has recently demonstrated that niches were used for storing scrolls in house VI 17, 41 (room 18) in Pompeii, which proves that private libraries could also have been equipped with wall cupboards.³⁴¹ Unlike closable cupboards, which are a Roman invention, shelving for scrolls seems to have a somewhat longer history. Perhaps we should place the earliest examples in the Hellenistic period. The library of Eumenes II (197-159 B.C.) in Pergamum certainly had niches with shelves for scrolls.³⁴²

3.7 Formal similarities

In spite of the diversity of form now established for the Herculaneum furniture, we can identify several general features. Some of these are structural, for example the use of framing with loose panels, a technique which appears in both couches and storage furniture. Although

³³⁶ The whole letter is quoted in: Comparetti/De Petra 1883, 242. For the library see also: letter from Winckelmann to Bianconi dated 13 May 1758: 'De' volumi antichi ne sono scavati più di ottocento, tutti trovati in una piccola stanza d'un palazzo d'una villa sotto 'l giardino degl'Agostiniani Scalzi à Portici. Questa stanza aveva scrinj attorno d'altezza poco più d'un uomo per cavarne libri con comodo, ed era spartita in mezzo de' scrinj d'istessa altezza con un passaggio fra mezzo.' (ed. Rehm/Diepolder 1952, 356-357 Nr. 212; cf. Van Dolen/Moormann 1992, 183); see also Baiardi 1775, 445: 'Una stanza ..., a mio credere, doveva essere una pubblica, o pure privata biblioteca, stanteché in essa si rinvennero molte casse, quasi a foggia di scanzie disposte dalle quali si sono estratti da trecento papiri.'; and Bonucci 1835, 30; Ruesch 1908, 419; Longo Auricchio/Capasso 1987, 39-47; Blanck 1992, 158-160.

³³⁷ Blanck 1992, 181 concludes on the basis of three passages in Cicero's letters to Atticus (4.4a, 4.5 and 4.8) that the cases in one of Cicero's libraries were open. The last passage is particularly interesting in this respect: *Nihil venustius quam illa tua pegmata, postquam sittybae libros illustrarunt*. (Nothing is more beautiful than these [book-]shelves of yours, now that labels adorn the books) The *pegmata* are probably open cases. The term *bibliotheca* was also used for cases for scrolls: Paul., Fest. 31 L; Dig. (Ulpianus) 32.52.7. There is one reference which seems to involve a built-in cupboard for scrolls in a private library: Plin., Ep. 2.17.8: *Parieti eius (sc. cubiculi) in bibliothecae speciem armarium insertum est, quod non legendos libros sed lectitandos capit*. (A cupboard which looks like a bookcase has been fitted into the wall of this bedroom. This contains books which, rather than being simply read once, deserve to be constantly reread.

³³⁸ Metropolitan Museum acc.nr. (1948) 48.76.1, cf. Petersen 1900, 171-176 (identified as the grave relief for a doctor); Budde 1940, 19-20 Kat. 17, and 63 Abb. 9; Richter 1966, 116 and note 6 (bibliography) and figs. 587-588; Amedick 1991, 135 Kat. 81 and Taf. 114, 1 and 2. For private libraries see also Blanck 1992, 152-160.

³³⁹ Dig. (Ulpianus) 30.41.9 and 32.52.7. Cf. also Budde 1940, 29-32; Wendel 1943, 267-281; Blanck 1992, 193-214.

³⁴⁰ Cf. Blanck 1992, respectively 196-198 with Abb. 101-102 and 201-205 with Abb. 108-111.

³⁴¹ Strocka 1993, especially 341-351 (room 18 is indicated in Abb. 1 on p. 323); Strocka dates the paintings in the room to between 50 and 40 B.C.; cf. Moormann 1988, 220.

³⁴² Cf. Wendel 1946, 7-8.

structural considerations were the main factor involved here (see § 4.6.2), there were also decorative advantages since large surfaces could thus be partitioned.

Another recurring feature is the use of similar decorative motifs. Wood mosaics on various pieces exhibit the same geometric figures, while furniture legs in the form of animal legs repeatedly appear. In Herculaneum we find this last motif in the tables and the benches, and the comparative material given in the preceding sections suggests that it was widely used in other forms of furniture as well as in numerous everyday objects, Greek as well as Roman. In the Roman examples we seem to see various very old traditions coming together. Their roots are probably to be found in Egypt. Indeed, the pharaohs were being personified by animals as early as the 1st dynasty; a bull for the Nile delta, a lion for southern Egypt.³⁴³ The legs of these animals are first worked into the legs of royal thrones and then come to symbolize the pharaoh himself. The bull legs gradually fell into abeyance and from the 5th dynasty onwards it is only lion legs which are incorporated into thrones.³⁴⁴ From the beginning of the Middle Kingdom, the modelling of furniture legs as animal legs was a general practice.³⁴⁵ It arrived in Greece and Magna Graecia via the East during the Orientalizing period, and must soon have become popular.³⁴⁶ In his review of Richter (1926), E. Pernice (1927, 362) correctly observes that the difference between the animal legs in Egyptian and Greek furniture is that the Egyptian legs are more naturalistic (with both fore and rear legs rendered) and the Greek more stylized. This in itself suggests a Greek adoption of the Egyptian motif via the Near East.³⁴⁷ An extra stimulus perhaps came from Persian influence during the reign of Alexander the Great.³⁴⁸ In the Hellenistic period we often find furniture with animal legs. In Roman furniture, besides the forms discussed above, they appear in thrones and footstools.³⁴⁹

The addition of animal or anthropomorphic busts to table legs which already have an animal leg form must be regarded as a typically Roman phenomenon. As we have seen, this may have been part of a general trend running from about 50 B.C. until Hadrian (for wall paintings) and up to the 4th century A.D. (for furniture), possibly with a break conditioned by official, Imperial art between c 15 B.C. and c 40 A.D..

The question of whether particular forms or details were the speciality of particular workshops must remain unanswered. The objects themselves tell us nothing about this.

³⁴³ Cf. Schweitzer 1948, 18-20; Baker 1966, 20-23 and fig. 1 (bull's legs from Abydos, 1st dynasty); Kühlmann 1977, 86-87; Metzger 1985, 10-13.

³⁴⁴ Feulner 1930, 18 and 1980, 17; Schweitzer 1948, 21 and 27; Baker 1966, 21, 132, 143-144; Metzger 1985, 10-13.

³⁴⁵ Schweitzer 1948, 38.

³⁴⁶ Eastern examples: two round tables with four legs in the form of complete lions, were found in Pazyryk (permafrost) in the Altai Mountains, cf. Rudenko 1948 and Grodte 1989, 125; for animal legs in Assyrian furniture cf. Baker 1966, 181-187 and figs. 289-298; the most famous example is the table on the relief with Assurbanipal in the British Museum, inv. 124920, cf. Baker 1966, 190 fig. 305. Animal leg forms do not occur in Greece before the Archaic period, cf. Jahn 1990, 6 Anm. 25, and 152-153. See also Reincke 1935, 503; Baker 1966, 261. There are Greek examples of animal legs in furniture in: *thronoi*: cf. Richter 1926, 5-13, Richter 1966, 15-18 and figs. 40-62 ('type I'), Richter 1966, 29-33 and figs. 128-140 and 144 and figs. 146-165 ('type IV'); folding stools: cf. Richter 1926, 40-41 and figs. 109, 114, 118, 121, Richter 1966, 43-45 and figs. 237-253; beds (sporadic): cf. Richter 1926, 57-58 and fig. 151, Richter 1966, 54-55 ('type I') and figs. 290-291; footstools: cf. Richter 1926, 73-74 ('type b') and Richter 1966, 50-51 ('type II') and figs. 282-283, 286. Early examples of the use of animal legs in furniture in *Magna Graecia* are the *thronoi* depicted on the terracotta plaquettes from Lokroi Epizephyrioi (from about 650 B.C.; cf. Orsi 1909, 421-427 and 463-469). In Etruria the motif was taken over towards the end of the 6th century B.C.. It first appears in late 6th century footstools: cf. Steingraber 1979, 44-46 and 115-116: 'Fussbanktyp 2b'.

³⁴⁷ An exception is provided by the Greek seats which are depicted on Spartan heros reliefs. Here both the front and rear legs are modelled. These should be regarded as a local variant and may possibly be derived directly from Egyptian examples. For these reliefs see Richter 1926, 10 and fig. 14; Baker 1966, 263; Stibbe 1991. For animal legs in furniture see also Kyrieleis 1969, 72-81 and 181-192.

³⁴⁸ For clear early examples (c 325 B.C.) see Vollmoeller 1901, 368-373.

³⁴⁹ Thrones: Richter 1926, 119-120 and figs. 278-282; Richter 1966, 99-101 and figs. 490, 498-504. Footstools: Richter 1966, 103-105 and fig. 519.

3.8 Conclusion

In this chapter we have dealt with the various forms of furniture which have survived in Herculaneum. A combination of the surviving fragments with comments made in the excavation reports has enabled us to reconstruct a number of pieces.

Three types of beds/couches are preserved: 'beds with boards', *biclinia* and children's beds. Of a fourth type, 'beds with *fulcrum*', no substantial wooden remains have survived in Herculaneum, but it is apparent from a number of bronze appliques for *fulcra* that the type was indeed present. In one bed, found in the Casa del Tramezzo di Legno (cat.no. 1), we see elements from the 'bed with boards' and the 'bed with *fulcrum*' combined. Although only three types of bed are preserved, there seems to be wide variation possible within these types. There is a strong indication here that the 'bed with boards' appeared much earlier than has been previously thought.

All the preserved tables belong to the same type, with three legs in the form of animal legs supporting a round top. However, the details are worked out differently in each case. The essential form goes back to Hellenistic models, but the decorative addition of a whole animal, or of animal or human heads, must be seen as a Roman innovation.

The animal leg likewise appears in the three benches, although the forms are much more stylized than in the tables. Here again, such legs undoubtedly go back to Hellenistic models. The benches themselves are simply made, their form being derived from their function. A striking feature is that the legs are only finished as animal legs at the front, while at the back they are flat. This indicates that they were intended for placing against the wall and not as free-standing pieces (placed to a table, for example). The only stool in Herculaneum is simple in form (again directly derived from the function) but the decoration of the seat (a star in wood mosaic) makes it an exceptional piece.

Since there are many differences to be noted in the storage furniture, we have opted here for a division into four main categories: cupboards, *aediculae*, racks and chests. Of the first group, cupboards, the Herculaneum examples can be compared with many similar pieces depicted on reliefs throughout the Roman Empire. The second group, *aediculae*, are much less often represented, but examples in other materials from Herculaneum and Pompeii and the evidence of similar contents found elsewhere (such as bronze and terracotta statuettes of the gods) are so frequent that we can assume the widespread use of such furniture beyond Pompeii and Herculaneum. Racks in service rooms and shops are only documented in Herculaneum, but here too it can be assumed that they were widely used, if only because of their functional form. Finally, chests are a general feature of the inventories of Herculaneum houses and finds elsewhere confirm that these were very common pieces of furniture in the Roman period.

It is not, in our view, possible to distinguish any chronological development of form or type taking place within the furniture which has survived from Herculaneum; the frozen moment created by the eruption suggests that all the surviving furniture was in use at the same time. Nor can we identify the makers. In spite of various resemblances between different types of furniture, one has the strong impression that there was no serial production.

Although Herculaneum provides the only known examples of certain forms of furniture, the Simpelveld sarcophagus (Netherlands, c 200 A.D.; fig. 10) reveals that several of these undoubtedly had a wider distribution; for example, the 'bed with boards', the three-legged round table and the cupboard with two panelled doors. It must be said, however, that the sarcophagus depicts other forms of Roman furniture which have not been found in Herculaneum, one example being the reed chair with back and arm rests.³⁵⁰

³⁵⁰ For the wickerwork in this type of chair see § 4.6.7.

CHAPTER 4

MATERIALS AND TECHNIQUES

4.1 Introduction

The Herculaneum furniture is invaluable to our understanding of Roman cabinetmaking techniques. It is immediately apparent, from even the most superficial examination of their work, that the Herculaneum craftsmen were working to an exceptionally high standard. Closer study reveals that they had a thorough knowledge of the properties of a wide range of different woods and were using tools so advanced that many are still employed in the modern trade. With these they were able to produce complex joints and finely detailed finishes.

However, before turning to Roman cabinetmaking, we should briefly examine the roots from which it came. The Romans' skill was substantially based on the rich technical knowledge which had been built up over centuries in the surrounding region and which they further refined and developed. We will therefore begin with a review of the materials and techniques which characterized woodworking before the Roman period (§ 4.2). This is followed by a brief survey of the written sources touching upon the Romans' knowledge of woodworking (§ 4.3), and then by a discussion of the different types of wood used in Roman furniture. (§ 4.4). The impression left by the written sources is here compared with that given by an analysis of wood samples taken from the Herculaneum furniture. Roman carpentry tools (which were of course those used by the Herculaneum craftsmen) are examined in § 4.5. The observations of classical authors are here compared with archaeological finds. We then turn to Roman cabinetmaking itself, looking particularly at the joints, for which the Herculaneum furniture is a unique source. We also discuss the finishing processes, including various sorts of non-wooden fittings and appliques (§ 4.6 and 4.7). The chapter ends with a reconstruction of the work processes involved in furniture production (§ 4.8) and with some observations on the organisation of the trade (§ 4.9).

The emphasis throughout is on the Herculaneum furniture, but our wider knowledge of Roman furniture is always borne in mind. Thus written sources and finds from other places are brought into the discussion where appropriate. We also refer to modern works on carpentry and cabinetmaking as an aid to understanding the technical terminology.³⁵¹

4.2 The historical background

It should be remembered that archaeological research into ancient woodworking has always been heavily dependent on the number of objects which have survived from any given area (as is apparent from the discussion of the various forms of furniture in Chapter 3). It is therefore not surprising that a lot of work has been done on Egypt (Carter/Mace 1923; Baker 1966; Killen 1980), while Near-Eastern and early Greek material has long remained under-researched. This situation has only recently begun to change as smaller groups of wooden furniture, such as those found at Gordion (Simpson 1985), are studied. There have also been a number of recent studies which approach wooden furniture from well-defined cultural areas on the basis of the few original pieces, supplemented by contemporary written sources and depictions. These include the work of B. Jahn on the Greek Bronze Age (1990), S. Steingraber on the Etruscan region (1979) and B. Grodde on Central and Northern Europe during pre- and proto-history (1989, especially 21-39).

³⁵¹ Wijker/Kaper 1913; Spannagel 1954; Boerhave Beekman 1964-1968; Blandford 1985; Pieresca 1985.

However, these studies deal largely with the form and typology of the furniture and give much less attention to the materials and techniques involved.

Of course, the most direct influence on the development of Roman technique was Greek, and *Magna Graecia* probably served as a conduit for technological knowledge. During the Hellenistic period the Greeks were particularly well-informed about a wide range of materials, techniques and tools for cabinetmaking. Thus the chief period of Greek technological influence on Roman craftsmen was the 3rd century B.C., first via *Magna Graecia* and later from the Hellenized East.³⁵²

4.2.1 Egypt

The form of Egyptian furniture has been widely studied (see § 1.3), but much less attention has been given to the materials and techniques employed in its production. There is a particular dearth of work on the woods and woodwork joints used by the Egyptians. We do learn quite a lot about woods from Egyptian texts, but this information has rarely been tested against any analysis of the surviving wooden objects.³⁵³ Of the few artefacts which have been analyzed, the most important are a cedar-wood toilet chest from the reign of Amenophis II (c 1438-1412 B.C.), and a coffin from the 22nd dynasty made of *Acacia nilotica* with dowels of *Tamarisk gallica*. The acacia of the coffin comes from a single tree-trunk and has clearly been sawn radially with great precision.³⁵⁴ A. Lucas (1962, 429-430) compares the results of such analyses with the data gleaned from written sources. Put briefly, the texts state the following: that wood for furniture was scarce, making it necessary to import foreign woods, often from far away. One might be tempted to accept this picture as reflecting daily reality, but the descriptions which have come down to us refer only to luxury articles. Ordinary functional furniture, for which virtually no sources exist, were very probably made from indigenous materials, even if these were of lesser quality.³⁵⁵

The end products clearly reveal a high level of skill in their makers, even though their tools were primitive and made from relatively soft materials such as copper and bronze. We know a great deal about the tools and the way they were used, thanks to the discovery of a miniature workshop in a tomb at Deir-el-Bahri.³⁵⁶ We see men at work sawing, making mortise-and-tenon joints and polishing with fine sandstone. One of the most important tools, the adze (used for shaping rounded elements), is not shown in use but we find tiny adzes in a chest full of miniature tools from the same workshop. Besides this fascinating treasure, we also have a number of depictions of Egyptian carpenters. W. Boerhave Beekman (1949, 508 fig. 7.62) shows a relief from the tomb of Ti (5th dynasty) portraying a workshop where craftsmen are busy sawing a plank, boring a hole for a mortise-and-tenon joint, and finishing off a bench. Both Boerhave Beekman (1949, 509 figs. 7.63 and 7.64) and H. Baker (1966, 129 fig. 178, 298 fig. 460, 302 fig. 464) show pictures of woodworking scenes carved and painted on the walls of the tomb of the vizier Rekhmire (Thebes, 18th dynasty), in which we see a stool and a bed being made, and veneer being

³⁵² Cf. Von Petrikovits 1981, 68.

³⁵³ A list of the types of wood mentioned in the written sources is given by Boerhave Beekman 1949, 409-423 (indigenous varieties) and 423-439 (foreign varieties); cf. also: Baker 1966, 293 and 295; Sliwa 1975, 9-17; Killen 1980, 1-6; Leospo 1987, 120-125.

³⁵⁴ Toilet chest: Aldred 1954, 686-687, fig. 486; coffin: Corona 1979, 88-92, in the Vatican's Museo Egizio. Other examples are: wooden coffins from Heliopolis, made of *Ficus sycomorus* and *Platanus orientalis*, cf. Petrie/ Mackay 1915, 23; a bedframe from the first dynasty made of acacia and a chair from the eighteenth dynasty made of tamarisk, both in the Metropolitan Museum in New York, Rogers Fund 12.187.52 and 12.182.28, cf. Scott 1965, 141 figs. 28/29 and 145 fig. 39. The dating of pharaohs and dynasties is based on Lange/Hirmer 1978.

³⁵⁵ Cf. Lauffrey 1970-1971, 162: on local varieties of wood in domestic architecture.

³⁵⁶ Cf. for example Boerhave Beekman 1949, 511 fig. 7.66; Winlock 1955, 33 no. 5, plate 28/29 and 68/69; Baker 1966, 300 fig. 462; Leospo 1987, 121 fig. 60. The workshop was found in the tomb of Meket-Re in Thebes and is now on display in the National Museum in Cairo, inv. 46722. Several of the tools it contained can be seen at the Metropolitan Museum in New York, acc.nrs. 20.3.91-98.

glued. Baker also shows the original tools.³⁵⁷

The only thorough study we have of the woodwork joints used by the Egyptians is that of Petrie and Mackay, published in 1915 (cf. fig. 20).³⁵⁸ Mackay's conclusions, based on the joints in a number of coffins, have been adopted by subsequent writers.³⁵⁹ Virtually no work has been done on the joints used in furniture. Mackay clearly shows that the Egyptians were using all the elementary joints, albeit in primitive form. An important addition to our knowledge has since been provided by E. Corona (1979, 85-92), who also studied the joints in a wooden coffin.³⁶⁰

Mortise-and-tenon joints were already in use in the 4th dynasty (c 2723-2563 B.C.), and mitred joints in the 3rd dynasty (c 2778-2723 B.C.), as were dove-tail joints.³⁶¹ All these were usually strengthened with wooden dowels, copper plates, cord or leather thongs.³⁶² Glue was widely used from the 5th dynasty onwards.³⁶³ In the cedar-wood toilet chest we also find a primitive form of panel, attached to its frame with dowels.³⁶⁴

Veneer is found on small chests and boxes from as early as the 1st dynasty.³⁶⁵ In such items inlay work in ivory and ebony covers an entire surface.³⁶⁶ Boerhave Beekman's view (1949, 429) is that the wood used is either *Diospyros incarnata* Gürke or *Diospyros crassiflora* Hiern, both varieties of black ebony. The ivory and ebony together would thus have created a black and white mosaic. This Egyptian veneer is still very thick (2-4 mm). Less often, on especially expensive pieces, gold and silver leaf is used (Killen 1980, 8-9). There are also combinations of ivory and faience, as for example on a chest from Gebelein.³⁶⁷

To finish a wooden surface the Egyptians seem to have used beeswax or a layer of varnish (either transparent or black, the latter probably being pitch (Killen 1980, 10)). Another alternative was a layer of plaster, which could either be painted or serve as a foundation for gilding.³⁶⁸

It should not be forgotten that the pieces which survive from Egypt come primarily from the tombs of the rich and thus give a picture of the furniture used by the elite. Ordinary furniture was undoubtedly much simpler and made from indigenous materials using less advanced tools and techniques.

Sliwa (1975, 65) tells us that while technical innovations generally manifest themselves over a long period of time, major changes in the organisation of the trade appear to have been introduced much more quickly.

4.2.2 Greece

Relatively few wooden objects have survived from Ancient Greece. Nonetheless a surprising amount of work has been done on the woodwork produced in the long passage of time between the Protogeometric and the Hellenistic periods.³⁶⁹ C. Watzinger's work on Hellenistic coffins (1905) is of fundamental importance to our knowledge of Greek technique. The material he studied came from the area surrounding the Greek colony of Pantikapaion (Kertch) in the Crimea and from

³⁵⁷ Baker 1966, 24-25 and 296 fig. 458. These are on display in the British Museum, inv. 22834 etc. For tools, see also Lucas 1962, 448-451; Scott 1965, 132-133; Sliwa 1975, 21-35; Leospo 1987, 125. For scenes depicting carpentry, see Sliwa 1975, 73-76.

³⁵⁸ Petrie/Mackay 1915, 24-27 and plate XXIV-XXV.

³⁵⁹ For example: Aldred 1954, figs. 491-492; Lucas 1962, 452-459; Baker 1966, 296 fig. 457; Sliwa 1975, fig. 14.

³⁶⁰ Cf. also Leospo 1987, 122 fig. 161, 125-126.

³⁶¹ Cf. Boerhave Beekman 1949, 514; Lucas 1962, 453.

³⁶² For dowels, see Boerhave Beekman 1949, fig. 7.04: canopic shrine; for leather thongs, see Petrie/Mackay 1915, 26 and 28.

³⁶³ Cf. Lucas 1962, 3-5; Sliwa 1975, 49-55; Killen 1980, 9.

³⁶⁴ Cf. Watzinger 1905, 64 and fig. 122b.

³⁶⁵ Cf. Aldred 1954, 695; Lucas 1962, 454.

³⁶⁶ Cf. Aldred 1954, 486 and 487 fig. 687. For a chest from the eighteenth dynasty with veneer in the same materials, see Petrie 1927, 36 no. 77 and pl. XXXIII 2. Cf. also Baker 1966, 148.

³⁶⁷ Leospo 1987, 137-138 tav. 182: Turin, Museo Egizio inv. suppl. 15709.

³⁶⁸ Cf. Baker 1966, 304, 307, 308.

³⁶⁹ For a discussion of furniture making techniques in the Aegean region before the proto-geometric period, see: Baker 1966, 234-254; Richter 1966, 5-12; Jahn 1990, *passim*.

Abusir in Egypt. All the indications are that the techniques employed in these places correspond closely with those generally used by Greek furniture makers.³⁷⁰ Further important work on the subject has been done by C.L. Ransom (1902 and 1905), A. Wasowicz (1966, 84-145) and E. Brümmer (1985, 1-94). A certain amount of technical information is also given by G.M.A. Richter (1926 *passim*, and 1966, 146-158). In addition there are various publications on the wooden objects found on Samos, most of which date from the Archaic period.³⁷¹ Also worth mentioning is a bed from the 5th century B.C., found at Duvanli (Losarskata Mogila, Bulgaria) in 1931.³⁷²

Unfortunately the archaeological literature includes very few analyses of the wood found in the surviving Greek furniture. Our knowledge of the types of wood used is therefore heavily dependent on literary sources, the most important of which is the *Historia Plantarum* by Theophrastos (especially Chapters V 3, V 5 and V 7). This can then be supplemented with such data as we do have from analyses of the objects themselves.³⁷³ There is one extensive study of the wood used for furniture, but this was made in the last century by H. Blümmer (1879, 245-296). Also of interest is H.G. Buchholz, who in the course of a study of wooden remains in Tamassos on Cyprus (1988) provides a general survey of the use of wood in Greece.³⁷⁴

Woodworking tools underwent an enormous development in the Orientalizing period of the 7th century B.C., under the influence of Egypt and probably of Asia-Minor. This helps to explain why the wooden artefacts on Samos are still produced with quite 'primitive' methods and tools, while Hellenistic coffins provide evidence of extensive development based on the use of more advanced tools.³⁷⁵ One important discovery (either Greek or from Asia Minor) was the lathe, which probably appeared in the 8th century B.C.. A well-known depiction of this tool comes from Petrosir in Egypt,³⁷⁶ where it may have been introduced by Greek colonists.³⁷⁷ Although the perfecting of such tools must largely be ascribed to the Roman period, we can gather, both from literary sources and from the tool marks left on Greek artefacts, that nearly all the tools used by modern craftsmen (the most significant exception being the plane) were already present in the Greek world, even if sometimes in crude versions. These tools made it quite possible to create attractive forms, as is apparent from the Hellenistic coffins. Amongst the most important literary sources on tools and their usage are two poems by Leonidas of Tarentum.³⁷⁸

There is little variety in the joints used in the Samos furniture. They are primarily open mortise-and-tenon joints, generally strengthened with wooden dowels or wedges.³⁷⁹ These were not subject to the oxidation which could affect metal nails and furthermore allowed an entire piece to expand and contract together.

Watzinger (1905, 63-89) is very informative on the joints employed in the Hellenistic period, while Wasowicz (1966, 102 fig. 40) has rendered them in diagrammatic form (see fig. 21). Ransom (1905, 128 Abb. 2 and 4) made several technical drawings of joints used in furniture. Most of the coffins studied by Watzinger stand on two horizontal supports, to which the floor, the

³⁷⁰ Watzinger's work has since been complemented by: Pinelli/Wasowicz 1986, 31-57 (the Crimea); Parlasca 1991, 113-127 (Egypt).

³⁷¹ These include: Ohly 1953; Homann-Wedeking/Jantzen/Kopcke 1966; Kyrieleis 1980 and 1983.

³⁷² This is a funerary bed made of *Fraxinus*, 1,37 m. long and 0,50 m. wide. It is published by Filow 1934, 119-126.

³⁷³ For example: a wooden *kouros* made of acacia, possibly made out of a 12th dynasty Egyptian artefact. It is in a private collection. cf. Johnston 1975, 125-126.

³⁷⁴ Buchholz 1988, 85 Anm. 17 and 22 refer to furniture; 151-157 provide an extensive bibliography on wood and archaeology.

³⁷⁵ For Samos: cf. for example Ohly 1953, 89 Nos. 7 and 8 and *Beilage* 22-27.

³⁷⁶ Cf. Wasowicz 1966, 75-76 and figs. 21-22.

³⁷⁷ Cf. Rieth 1940, 631.

³⁷⁸ *Anthologia Palatina* 6.204 and 205; the poems are discussed by Gigante 1971, 55-62. For Greek tools, see also Wasowicz 1966, 54-83.

³⁷⁹ Ohly (1953, 96-98 No. 10, Abb. 7) shows a footstool and a chair leg from the 7th century B.C. in which the open mortise-and-tenon joints are strengthened with wedges; Kopcke (1967, 131 No. 23 a, b and *Beilage* 72-74, 2 Abb. 13-14, Inv. H. 58) gives elements of a bed with open mortise-and-tenon joints; cf. also Kyrieleis 1980, 107-112 Kat. 19, 20 and 21.

front and the back of the coffin are fixed. The side boards are attached to the floor with wooden pins. The vertical boards are mitred at the edges and joined with dowels fitted obliquely across the joint. Additional strength was obtained by not running the mitres right through to the top, and having one upper plane partially overlapping the other.³⁸⁰ The sophistication of such joints show just how far carpentry had developed. One Hellenistic coffin from Egypt even shows that the makers were consciously choosing to use only heartwood, the best part of the tree (Cagiano de Azevedo 1957, 13). Here too the joints are strengthened with wooden dowels.

A very thorough study of one particular coffin has been made by W. Gaitzsch, P.I. Kuniholm, W. Radt and S. Schiefer (1985, 139-172). This coffin was found in Elaia, the harbour town of Pergamum, and probably dates from the 2nd century B.C.. Dove-tail joints are used in the base, while the sides consist of planks held together by mortise-and-tenon joints and dowels. The wood used is heartwood from *Taxus baccata* L. Some parts were painted white.

To reduce warping in the vertical planes, the coffin walls are usually assembled from a framing into which fits a panel. The technique is still quite primitive: the panels are still pegged to the framing which (because they cannot work independently) impedes their anti-warping properties.³⁸¹ We often find similar framed panels in the chests depicted on Greek vases. We even have an original, in the form of a Hellenistic toilet chest.³⁸² Greek knowledge of framed panels can be further deduced from the metope-triglyph friezes on Doric temples. In stone temples the metope filling had no structural function, but in their wooden predecessors it served to combat the warping tendencies of the wood.³⁸³ In spite of such evidence, however, the earliest known examples of entirely loose panels stem from the Roman period.

It is very likely that the Greeks used veneer, although the only source we have on the subject is a single inscription which mentions a veneered bed.³⁸⁴ We do not have any original furniture with such a finish, although there is a boxwood veneer on a Hellenistic coffin from Kul-Oba (in the Crimea).³⁸⁵ Turning, almost certainly a Greek invention, probably dates from the 8th or the 7th century B.C..³⁸⁶

More costly furniture was usually finished with bronze, ivory or bone fittings, as many archaeological finds confirm. In the Hellenistic period the use of such appliquéés was particularly popular.³⁸⁷ These were often finely decorated with human figures, animals, plant motifs or scenes, either inlaid or in relief. Carving was commonly used as early as the Archaic period, as is clear both from the original artefacts found on Samos and from the depictions and stone copies of wooden furniture which were placed in tombs.³⁸⁸ In the capitals of various coffins from the

³⁸⁰ A similar joint was already in use in Egypt, cf. Petrie/Mackay 1915, pl. 25.

³⁸¹ Watzinger 1905, 67 thus calls the panels 'Scheinfüllungen dekorativer Art.' Cf. Minns 1913, 322-335 and fig. 232 (wooden coffin from Olbia in the museum at Odessa); Cagiano de Azevedo 1957, 13-20.

³⁸² Watzinger 1905, 64 Abb. 122 and 66: the toilet casket comes from Abusir. For the technique used, see Watzinger 1905, 67 and Abb. 124.

³⁸³ Cf. Cagiano de Azevedo 1957, 20.

³⁸⁴ Cf. Pritchett 1956, 231: on Attic *stêlai* which refer to confiscated furniture as 'χάμενμα παράκολλος'.

³⁸⁵ Cf. Watzinger 1905, 56-57 No. 41.

³⁸⁶ Cf. Baker 1966, 138 and 263-264; Richter 1966, 19-23 and figs. 64-83 (in the legs of thrones, type 2); Richter 1966, 38-42 and figs. 200-223 (in the legs of *diphroi*-stools, type 3); Richter 1966, 55-58, and figs. 293-305 and 308 (in the legs of beds).

³⁸⁷ See the account of bed appliquéés in Faust 1989, *passim*; for bone: Marangou 1976, who presents 291 pieces from Egypt now in the Benaki Museum in Athens. The Kertch coffins usually have appliquéés of plaster or terracotta. It is not known whether this material was also applied to furniture. For this see Watzinger 1905, 60-62, and Pinelli/Wasowicz 1986. Several examples of very costly late-Archaic beds, with appliquéés of ivory, bone and amber, have been found in graves: in shaft grave 3 (HW 87) of the south hill of the Kerameikos in Athens, dating from before 520 B.C. (Knigge 1976, 60-83 and Abb. 22 and Tab. 102-111); a very similar example has been found in a grave in Grafenbühl, Asperg, Kr. Ludwigsburg, Hallstatt period (Fischer 1990, 115-118). Both beds may well have been imported from Ionia. For Greek bed appliquéés, see also Richter 1966, 56-58.

³⁸⁸ Kyrieleis 1980, 107-119 Kat. 19-23: the repertoire of the wood-carving on these stools or pedestals is related to the design on late-Geometric and sub-Geometric Eastern Greek ceramics (8th/7th centuries B.C.). For decorative wood-carving see the chests depicted on the terracotta plaquettes from Lokroi Epizephyrioi (Orsi 1909, *passim*).

Kertch area, the eyes of the volutes are inlaid with glass paste.³⁸⁹ There is also evidence pointing to the polychrome decoration of furniture.³⁹⁰ Unfortunately we have only a very few depictions of cabinet-makers at work from the Greek period.³⁹¹

In the opinion of Wasowicz (1966, 231-232), the most important feature of woodworking in Classical and Hellenistic Greece was 'l'épanouissement de la menuiserie' (the flowering of cabinetmaking) which expressed itself in a shift from purely utilitarian pieces towards furniture which combines functionality with a decorative appearance. I question whether this was really such a novel development. If we review what we know about furniture in prehistoric Greece, it seems likely that Wasowicz has been misled by the lack of wooden artefacts from the pre-Classical period (from the proto-Geometric period onwards). The Geometric and Archaic furniture from Samos clearly presents a harmonious appearance, however structurally limited and apparently primitive it may be. I agree with Wasowicz, however, that structural and decorative diversity increased greatly from the Classical Greek period onwards.

4.2.3 The Apennine peninsula

Although one can trace two lines of technical knowledge, one deriving indirectly from Egypt and the Near-East and the other coming more directly from Greece, one could also argue that the early Romans based their skills partly on the technical knowledge which was present on the Apennine peninsula. They certainly took over techniques from pre- and proto-historic Central and Northern Italy, especially from the Etruscan area.³⁹² Nothing is known about the types of wood used for furniture in these areas. The thrones from graves at Verucchio near Rimini, which are featured in articles by G.V. Gentili, are good examples of advanced technical development. Their geometric and figurative carved motifs reveal Orientalizing influences from the 7th century B.C..³⁹³ Mortise-and-tenon joints are found in four three-legged tables with round tops, also from Verucchio.³⁹⁴ Metal furniture fittings from the 7th century B.C. are found in Etruria, showing the influence of the Orientalizing phase in Greece.³⁹⁵ The most potent influence from within Italy, however, came from the area colonized by the Greeks in the south. The position of Campania, which served as a bridge or conduit between *Magna Graecia* and the city of Rome, would suggest that developments in this region may well have run ahead of those in Rome itself.

³⁸⁹ Examples of this are given by Watzinger 1905, 45-47 Nr. 26 and 28 and Abb. 81, 87-88.

³⁹⁰ For polychromy on chairs from the Greek Bronze Age see: Jahn 1990, 76. The appearance of polychromy on Hellenistic coffins perhaps provides a clue to the way we should imagine painted Greek furniture. See the examples of this in Watzinger 1905, 27-36, Nos. 3-4, 6, 7-10 from Egypt and the Crimea. Here we find vestiges of yellow, dark red, blue and white. Some examples also display carving and gilding. For polychromy on wood see also: a coffin from Kul-Oba, in the Crimea: Vaulina/Wasowicz 1974, 32-33 and 45-51 cat. 1 and pl. I-VII; a small chest in the Hermitage Museum, inv. P 1867.101: Vaulina/Wasowicz 1974, 135-137 cat. 58. The polychromy on the bed-form stone sarcophagi in the 'Bella Tumul' near Vergina is undoubtedly a suggestion or a copy of that to be found on original wooden beds, cf. Andronicos 1984, 34 figs. 13 and 14. Cf. further Wasowicz 1966, 232; Moormann 1988, 75. For the decoration of chests see Brümmer 1985, 78-85. The finishing of furniture (with silver-leaf, glass paste, gold, ivory, polychromy and turned elements), as described in Homer, is examined by Jahn (1990, 185-190).

³⁹¹ Cf. Wasowicz 1964, 214; Richter (1966, 127) gives six examples of depictions of carpenters on vases. Of these, three are of particular interest: the inside of a *kylix* from Vulci, now in the British Museum, inv. E 23 (Carpenter Painter), shows a plank being worked with a pointed hammer; the inside of a *kylix* in the National Museum in Copenhagen, inv. 119, shows a wooden herm being made with a chisel; a *hydria* in the Museum of Fine Arts in Boston, inv. 13.200, illustrates the making of a chest (legend of Danae); for illustrations see Richter 1966, figs. 609-611. For more on cabinet-making see Wasowicz 1966, 146-175.

³⁹² Cf. Steingraber 1979, passim. For open mortise-and-tenon joints in oak from the 5th century B.C. near Como, see: Castelletti 1974-1975, 117-120 and 99 tav. 1.1. Great technical knowledge of wood in the 3rd century B.C. is indicated by a ship found near the Isola del Giglio, in which 15 different types of wood have been used. It appears that the properties of each wood have been taken into account in the way they are worked (cf. Abbate Edlmann/Dell'Amico/Giachi 1989, 116-118).

³⁹³ Thrones: from grave 26 of the Fondo Moroni, see Gentili 1985, 88-89 no. 53, inv. 8641 (with geometric motifs and battle scene); id. no. 60: backrest with geometric motifs; from graves 85 and 89 of the so-called '*Necropoli sotto la Rocca*' come two thrones, see Gentili 1985A, 24-26 and 1988, 233-242. On the latter is a scene involving the working of wool.

³⁹⁴ One table comes from grave 26 of the Fondo Moroni: Gentili 1985, 88-89 no. 54 inv. 8642 (legs) and 55 inv. 8644 (top); three tables were found in grave 85 of the '*Necropoli sotto la Rocca*', cf. Gentili 1988, 233 and tav. Ma/b.

³⁹⁵ Cf. Steingraber 1979, 55-56, 58-59, 125 and 174.

4.2.4. The Celts

Little research has yet been done on the influence of Transalpine cultures on Roman woodworking techniques. It would take us too far from our subject to venture into this area, but it should be said that there is solid evidence for such an influence. Several antique texts refer to a tool called the 'Celtic drill', which was to be preferred to the existing Roman type (see § 4.5).³⁹⁶ B. Grodde (1989, 22-39 and 155-176) examines various techniques used by furniture makers in pre- and proto-historic Central and Northern Europe, as well as carving, jointing, turning, metal fittings and the types of wood used in this region. Mortise-and-tenon joints are found in northern Europe during the Bronze Age.³⁹⁷ Dove-tail joints are found in a small chest from Zugmantel, in which three different kinds of wood are used (elm, lime and oak).³⁹⁸ As far as wood in general is concerned, 80% of wood samples analyzed from pieces found in Central and Northern Europe have proved to be oak, beech or maple. Grodde discusses eight pieces from which samples have been taken and analyzed. These, however, although they date from the Roman Imperial period, were found beyond the borders of the Empire.³⁹⁹

4.3 The written sources for woodworking in the Roman period.

According to Pliny (Nat. 7.198), carpentry was discovered by Daedalus, who had learned the technique from Athene/Minerva (Hyg., Fab. 39). Isidorus tells us (Orig. 20.1) that the first things made by Daedalus were a table and a stool. Pliny (Nat. 7.198) credits him with the discovery of the saw, the adze, the plumb line, the drill, ordinary glue (possibly obtained from the bones of cattle) and fish-glue.⁴⁰⁰ Daedalus is already the mythical representative of the craft in Homer.⁴⁰¹

The written sources supply two other names as inventors in relation to woodworking. Perdix, a nephew of Daedalus, is mentioned as the inventor of the saw and the compass.⁴⁰² He is said to have deduced the principle of the saw from the form of a fish bone, but was promptly murdered by the jealous Daedalus. Pliny (Nat. Hist. 7.178) names Theodorus of Samos as the designer of the carpenter's square, the *libella* (the forerunner of our level) and the lathe.⁴⁰³ He was also held to be the inventor of the *clavis*, a sort of clamp to hold wooden elements together.⁴⁰⁴ The fact that Theodoros of Samos is linked with three specific tools would seem to imply a kernel of truth, perhaps that these tools were indeed Greek innovations. Daedalus and Athena/Minerva were important figures for both Greek and Roman woodworkers, the one being their patron and the other their tutelary goddess. Indeed, during the Republic the Minerva cult in Rome centred around her position as the patroness of craftsmen.⁴⁰⁵

Apart from recounting the origins of carpentry, which are usually located in the mythical past, writers throughout the Roman period provide very little information on the materials and techniques used in furniture making. What there is usually appears in the form of casual remarks. Only one work provides a reasonable survey of woodworking technique, and this was written by Isidorus of

³⁹⁶ Evidence of turning: the carbonized legs of a stool from Wederath-Belgium, grave 1311, late Latène period, cf. Cordie-Hackenberg 1989, 187 and 193-194 and Abb. 5 and 6; for Celtic tools from Manching, see Jacobi 1974, 28-50.

³⁹⁷ Cf. Grodde 1989, 280-281 Kat. 113 and Tab. 7.4.

³⁹⁸ Grodde 1989, 29-31 and Abb. 12-13a and 15.

³⁹⁹ Grodde 1989, 254-256.

⁴⁰⁰ In connection with glue, see also Varro, ap. Char., Gramm. 167, 26B.

⁴⁰¹ Homer, Iliad 23.743, cf. Natorp 1901, 2006. Cf. Burford 1972, 198.

⁴⁰² Hyg., Fab. 39; id. 244.5 and 274.14; Isid., Orig. 19.19.9; Ov., Met. 8.244-249; Serv., A. 6.14. Holland 1902, 21-23 describes the myth with variations. The name Kaloos or Taloos sometimes appears instead of Perdix.

⁴⁰³ Theodorus of Samos (second half of the 6th century B.C.) is better known as the architect of the *Heraion* of Samos and of the temple of Artemis in Ephesus, cf. Van Buren 1948, 502-503. For Theodorus of Samos, see also SQ 274-283.

⁴⁰⁴ For an account of this meaning of *clavis*: Isid., Orig. 19.19.7.

⁴⁰⁵ Cf. Richter 1966, 129; Schürmann 1985, 5 and 49 (on the equivalence of Minerva with her Greek predecessor Athena *Ergané*).

Seville at the beginning of the 7th century A.D..⁴⁰⁶ (Late as this is, it can be legitimately regarded as a source since Isidorus very often refers back to earlier authors.) For this reason we find that by far the richest source of information is the archaeological material itself. The discussion of materials and cabinetmaking techniques which follows, although based on a combination of archaeological and written sources, lays the main emphasis on data which archaeology alone can supply.⁴⁰⁷

4.4 Types of wood

Very few scientific analyses of Roman wooden furniture have yet been published. Our current knowledge of the woods they used is therefore largely based on the written sources.⁴⁰⁸ H. Jameson (1982, 488), referring specifically to Herculaneum, observes: 'It is dismaying to learn that the largest collection of ancient wood, from Herculaneum, has never been examined.' This is now beginning to change and the analyses conducted as part of this study provide an opportunity to compare information derived from written sources with data based on the analysis of wood samples. The results also provide clues about the landscape around Vesuvius in the period prior to the eruption.⁴⁰⁹

We begin with a survey of the written sources, then present the results of our analysis of the wood samples, and finally compare the very different pictures which emerge these two very different sources.

4.4.1 Literary and epigraphical sources

The literary and epigraphical sources were collected over a century ago by H. Blümner (1879, 245-296). We have drawn substantially on his work, aided by the additions and nuances which have been contributed by subsequent scholars. R. Meiggs, in a recent study of wood in antiquity, develops a hypothetical model to complement the written sources. In the absence of scientific wood analyses he devises a pattern of probability and bases a hypothesis about the Romans' use of wood on the species of tree which still grow in Italy.

The most important contemporary source on the subject is Pliny's *Naturalis Historia*, particularly books 12 to 16 which tell us about the specific uses of different woods. Pliny here largely relies on the *Historia Plantarum* by Theophrastos, which dates from the Hellenistic period. We also find scattered information taken from other authors.

It is clear that both indigenous and imported varieties of timber were available in the Roman period. Some were used largely for construction purposes, while others were also valued for their decorative qualities (Meiggs 1982, 279). Several woods were imported purely for their attractive grain, such as *Citrus*, a wood which is frequently mentioned in the Latin texts. Ebony, which was very popular in Egypt and Greece, may also have been imported. Both woods, *Citrus* and ebony,

⁴⁰⁶ Isid., Orig. 19.19.

⁴⁰⁷ Richter's account of technique (1966, 122-126) is very short and incomplete.

⁴⁰⁸ Some examples of furniture from which samples have been analyzed are: Vaulina/Wasowicz 1974, 164-165 cat. 94: chair seat made of *Acer*; id. 166-169: fragments of a round table made of cypress (*Cupressus*) (cf. also Vaulina/Wasowicz 1974, 23-25 and 175-177, annexe 3); a bed from Roman Egypt (from Thebes?) now in the Royal Ontario Museum, acc. 910.27: frame made of *Pinus pinaster* and the rest of *Morus* (cf. Needler 1963, 1-2); a table leg from Bergkamen-Oberaden made of *Acer*, cf. Kühlborn 1990, 182-184; other wooden artefacts have also been analyzed, e.g.: ships from Nemi, cf. Ucelli 1938, 138-140, note 10, analyzed by C. Sibilia; fragments of Roman coffins from the Crimea: cf. Pinelli/Wasowicz 1986, 50-51 and 55 (decoration in *Pinus*, a *Cupressus* board) and 175 no.89 (small box of *Buxus*); boat at Herculaneum (see the Introduction and note 3 above). For the use of wood in architecture, see: Adam 1984, 91-105. A very thorough survey of timber used in ship-building is given by Rival 1991, 11-98. Richter 1966, 122-123, deals only with written sources.

⁴⁰⁹ Cf. Ciarallo 1990, 24: 'Nuovi studi, sui legni di Ercolano in particolare, potranno forse aiutarci a ricostruire l'economia forestale e l'ambiente anche in questa zona'.

were very expensive and objects made from them were luxury articles.

Although the texts are almost wholly silent on the subject, most Romans undoubtedly possessed furniture made of cheap, accessible material. Because the price and ready supply of timber were important to both the cabinetmaker and the customer, we can assume that most furniture was made from trees which grew locally. Another important criterion, as Pliny himself points out, was the suitability of the wood for the task. In Book 16 of the *Naturalis Historia* he lists the qualities of different types of wood, such as beech (*Fagus* 16.229).⁴¹⁰ In some circumstances the grain also played a role in the choice.⁴¹¹ Maple (*Acer*), which (unlike *Citrus*) grew in Italy, was of good quality, pleasing appearance and, above all, affordable. Cypress, likewise to hand, was probably also used. Boxwood and lime were known to be good for carving and turning. However, we hear virtually nothing in the texts about the woods from which simple, everyday furniture was made. We can assume that beech was put to many uses, and that oak too was popular. *Salix* (willow), *Fraxinus* (ash), *Olea* (olive) and *Terebinthus* (terebinth) are other possibilities.⁴¹² Cedar, so popular in Egypt, is never mentioned in connection with the work of cabinetmakers.⁴¹³

The following survey lists the types of wood which we can reasonably assume were used for furniture, either because the written sources directly state that they were, or because they are named in the texts as the material for other objects. We begin, however, by examining the Latin terminology for wood in relation to furniture.

Two words, *materia* and *lignum*, are used as general terms for wood.⁴¹⁴ Seneca mentions the term *ligneus* for wooden beds and Suetonius uses the same word for wooden terraced seating.⁴¹⁵ However, far more common is the term *materia*, meaning the wood from which artefacts are made.⁴¹⁶ This is not surprising, since the term *lignum* seems to have been mainly used for firewood and *materia* for building timber. The specific difference between *lignum* and *materia* is given by Ulpianus in the *Digesta*.⁴¹⁷ *Materia* is the most common word used to describe wood for furniture production.⁴¹⁸

Abies alba - silver fir⁴¹⁹

Although the Latin sources nowhere mention the wood of the silver fir in relation to furniture,

⁴¹⁰ Cf. Meiggs 1982, 296.

⁴¹¹ Cf. Squarciapino, 44.

⁴¹² *Fraxinus* (*Fraxinus excelsior*) is not mentioned in the written sources, but judging by the present day it may well have been used for furniture: cf. Blümner 1879, 267-268, Giordano 1980, 172. In antiquity the tree was indigenous to Italy, but is now rare, except in the area north of the Faggetum. It is ivory coloured, attractive and strong and is still used for furniture.

⁴¹³ Cedar: *Pinus cedrus*, perhaps *Cedrus Libani*, cf. Blümner 1879, 254, and Giordano 1980, 366 and 367. De Waele 1949, 251, believes that it is *Cedrus Libani* Loudon. Cf. Plin., Nat. 16.203.

⁴¹⁴ *Materia*: adjective, *materiaris*; *lignum*: adjective, *ligneus*, *lignosus*.

⁴¹⁵ Sen., Ep. 17.12 and 95.72-73; Suet., Aug. 43.1.

⁴¹⁶ For example: Charisius 5, p.403, 6: *Materia fabris apta* (*Materia*, suitable for carpentry).

⁴¹⁷ Dig. (Ulpianus) 32.55 preface.: *Ligni appellatio nomen generale est, sed sic separatur, ut sit aliquid materia, aliquid lignum. Materia est quae ad aedificandum fulciendum necessaria est, lignum, quidquid conburendi causa paratum est.* (*Lignum* is a general term, but it encompasses two meanings, sometimes referring to *materia*, and sometimes to *lignum*. *Materia* is the wood required for building and shoring, *lignum* is wood prepared for burning.).

⁴¹⁸ Texts which mention *materia* in relation to furniture are: Var., L. 8.32 (bed); Dig. (Pomp) 32.57 (chest and cupboard); Dig. (Paulus) 32.88.1-2 (cupboard). Isid. (Orig. 19.19.4) uses the term generally for the material used to make furniture. The term *tabula* (beam) appears in two texts, meaning timber from which furniture is made: Gaius, Inst. 2.79 and Dig. (Gaius) 41.1.7.7. Another word used for workable timber, this time more related to its form, is *planca* (plank). Texts which employ this term are Fest. 258 L. and Paul., Fest 259 L., the second of which reads: *Plancae tabulae planae, ob quam causam et Planci appellantur, qui supra modum pedibus plani sunt.* (*Plancae* are flat planks, which is the reason why people with unusually flat feet are called *Planci*.).

⁴¹⁹ Adjective, *abiegn(e)us*: see for example Vitruvius 7.3.1. *Abies alba*: cf. Giordano 1980, 153-154. The wood is white or yellowish-white in colour.

Pliny tells us that it is particularly well suited for interior woodwork and doors.⁴²⁰ Theophrastos considered it good for making beds, stools and tables.⁴²¹ We can thus assume that it was also used for Roman furniture. Most of the texts which refer to it relate to shipbuilding⁴²² or architectural usage.⁴²³ It is also mentioned in connection with the Trojan Horse.⁴²⁴ We know from the written sources that the tree grew abundantly on the Italian peninsula⁴²⁵ but the quality of the timber seems to have been highly dependent on the precise source. With regard to the trade in this type of timber, one important source is CIL VI 9104, which refers to an *abietarius*, a dealer in fir. Another is a passage in Paulus (Fest. 25 L) which mentions the trade itself.⁴²⁶ From this last text we can cautiously conclude that there was a large trade in this kind of timber, because *abietaria negotia* was for a time the general term used for the timber trade.

Acer - maple⁴²⁷

Maple is often mentioned as a basic material for furniture. According to antique texts it was primarily made into tables⁴²⁸ and *solia* (armchairs).⁴²⁹ There is one reference to a *fulcrum* made of maple⁴³⁰ and elsewhere it appears in relation to a door.⁴³¹ According to Pliny (Nat. 16.68), a specific type of table was made from what was known as *bruscum* (the wood obtained from burrs).⁴³²

Buxus - box⁴³³

Virgil tells us that boxwood is suitable for turning.⁴³⁴ Considering the qualities of the wood, we can assume that it was also used for the turned components of furniture.⁴³⁵ There is one reference to an auction of boxwood in Pompeii. It appears on wax-tablet no. 5 from the archive of Caecilius Iucundus.⁴³⁶

⁴²⁰ Plin., Nat. 16.225: *Firmissima in rectum abies, eadem valvarum paginis et ad quaecumque libeat intestina opera aptissima sive Graeco sive Campano sive Siculo fabricae artis genere, spectabilis ramentorum crinibus, pampinato semper orbe se volvens ad incitatos runcinae aptus, eadem e cunctis maxime sociabilis glutino in tantum ut findantur ante qua solida est.* (Fir is very strong in a vertical position; it is also very good for door panels and for every sort of interior woodwork, be it in Greek, Campanian or Sicilian style. The wood typically produces curly shavings, which always spiral like a vine branch following strong strokes of the plane; this is the best of all woods for gluing, so much so that the wood will split before the joint.

⁴²¹ Theophrastos, *Historia Plantarum* III 10.1. For the qualities of *Abies alba* see also: Theophrastos, *Historia Plantarum* V 1.5-12.

⁴²² Liv. 28.45.18; Sidonius Apollinaris, *Epistulae* 8.12.5; Verg., G. 2.68; Verg., A. 5.662-663. Cf. also Rival 1991, 36-42.

⁴²³ CIL I 698.119; Vit. 2.9.6-7.

⁴²⁴ Virg. A. 2.13-16

⁴²⁵ Theophrastos, *Historia Plantarum* 5.8.1 and 5.8.9; Plin., Nat. 16.197. Cf. Rival 1991, appendix 6.

⁴²⁶ Paul. Fest. 25 L.: *Abietaria negotia dicebantur, quam materi <ari> am nunc dicimus, videlicet ab abietibus coemendis.* (The name for what we now call the timber trade was *abietaria negotia*. The term is of course derived from the buying up of fir). Cf. Edictum Diocletiani 12.1: *materia abiegnia* (building fir).

⁴²⁷ Adjective: *acern(e)us*. Perhaps *Acer pseudoplatanus* L. is meant, cf. Blümner 1879, 246-248, and Giordano 1980, 156. The tree still grows in Italy and can reach a height of 38 m.. The wood is yellowish-white in colour, reasonably resistant against burrowing insects and easy to work. It is still used to make furniture and for fine cabinetwork.

⁴²⁸ Hor., S. 2.8.10-11; Mart., 14.90 tit.; Ov., Met. 12.254-255 (in the description of the conflict between the Lapiths and the Centaurs); Plin., Nat. 16.185; Strabo 12.13.2.

⁴²⁹ Ov., Fast. 3.359; Verg., A. 1.175-178.

⁴³⁰ Ov., Pont. 3.3.13-14. There is possibly some reference to parts of beds made from maple in Pliny (Nat 16.68). In our view the term *lectus pavoninus* as used Martial (14.85 tit.), where the adjective is usually regarded as referring to maple, cannot be interpreted in this sense. The type of wood is not specifically mentioned and the description is too vague to identify any particular wood. Cf. also Plin., Nat. 16.97.

⁴³¹ Ov., Met., 4.486-487.

⁴³² For *Acer* in ship building see: Rival 1991, 72-74.

⁴³³ *Buxus sempervirens*: adjective *buxeus*, cf. Blümner 1879, 252-254; Giordano 1980, 159. *Buxus* also came from the Apennine peninsula or from Corsica. It currently grows in Central Europe. It is yellowish in colour, quite heavy and very hard. It is still used for cabinetwork and above all for turning. Cf. also Meiggs 1982, 281-282.

⁴³⁴ Verg., G. 2.449: *torno rasile buxum* (boxwood, easily made smooth on the lathe).

⁴³⁵ For boxwood in ship building see: Rival 1991, 76-77.

⁴³⁶ CIL IV Suppl. I, 284: *Ob auxionem buxiaria(m)* (because of an auction of boxwood). Cf. Andreau 1974, 313-314.

Citrus - thuja⁴³⁷

The wood most frequently mentioned in relation to furniture is *Citrus*. The Oxford Latin Dictionary equates it with *Callitris quadrivalvis*, but in our view a more likely candidate is *Tetraclinis articulata* (Sandarac tree), which exudes a lemony perfume. Classical authors tell us that the wood was imported from Mauretania.⁴³⁸ The spectacular mottled grain obtained from burrs was highly prized.⁴³⁹ *Citrus* table tops were invariably mounted on ivory legs and the link between *Citrus* and ivory is reflected in the epigraphical sources, in which the craftsmen *citrarii* and *eborarii* appear in combination.⁴⁴⁰ These so-called *mensae citreae* were very expensive and the value of such pieces increased with the size of the top (provided it was fashioned from a single piece of wood). These tops were always round, which explains why the term *orbis* was also used for this type of table. In poetry the table served as a symbol for great wealth and luxury.⁴⁴¹ This is apparent (amongst other things) from the fact that the cost is sometimes favourably compared with that of gold. The table also crops up in the prose sources, and with the same significance.⁴⁴² Moreover, whenever *Citrus* wood is mentioned in relation to pieces of furniture larger than tables, such as beds⁴⁴³, cupboards,⁴⁴⁴ or in architectural decoration,⁴⁴⁵ the extremes of luxury are implied.

The most extensive description of the wood is given by Pliny,⁴⁴⁶ who covers its provenance, use and value. According to him, the finest variety came from the *Mons Ancorarius* in *Mauretania Citerior*, which at the time he is writing has been entirely deforested. The most prized pieces for making into tables come from the burrs. These have a particularly attractive grain but, says Pliny, would be surpassed in beauty by maple were it to grow to a similar size.⁴⁴⁷ Pliny notes that Theophrastos mentions this wood without referring to tables, which suggests to him that the taste for the luxury tables probably began in Cicero's time.⁴⁴⁸ This is confirmed by Varro.⁴⁴⁹ It is possible, as Meiggs (1982, 288) has proposed, that the trade in *Citrus* wood was first stimulated by the war against Iugurtha (107-105 B.C.).

Seneca had a surprising aversion to tables with a spectacular grain, by which he undoubtedly meant *mensae citreae*: the grain would distract the eyes of the company and arouse voluptuousness and jealousy.⁴⁵⁰

⁴³⁷ Adjective *citreus*, cf. Giordano 1980, 903; the wood is also described as *Thuya articulata* Vahl. The tree is still to be found in the mountains of Algeria and Morocco. An extensive description of this wood is given by Meiggs, 1982, 286-291.

⁴³⁸ We read of this source in Strabo 17.3.4 and Plin., Nat. 13.91.

⁴³⁹ Giordano (1980,903) ascribes the phenomenon to damage caused to the *cambium* by grazing animals. The modern trade-name for wood obtained from these rare burrs is 'Tisswood'. Cf. also Blümner 1879, 274.

⁴⁴⁰ Amongst others: CIL VI 9258.9 and CIL VI 33885.4. The first of these mentions *citrarii* from Naples.

⁴⁴¹ Apul., Met. 2.19; Iuv. 11.117-131; Luc. 9.426-430; id. 10.144-146; Mart. 2.43.9-10; id. 9.22.5-6; id. 9.59.7-10; id. 10.80.1-2; id. 10.98; id. 12.66.5-7; id. 14.89; id. 14.90.1; id. 14.91; id. 14.139 [138]; Sen., Consolatio ad Helviam 11.6; Stat., Silv. 3.3.94-95; id. 4.2.38-39; regarding the text in Lucanus, Hunink (1992, 199-200) further argues that the wood serves as an image implying that whatever comes from far away is beautiful.

⁴⁴² Cassius Dio 61.10.3; Cic., Ver. 2.4.37; Dig. (Paulus) 19.1.21.2; Petr. 119.26-30; Plin., Nat. 5.12 and 37.204; Tert., de Pallio 5.5.

⁴⁴³ Pers. 1.52-53.

⁴⁴⁴ Sen., de Tranquillitate animi 9.6.

⁴⁴⁵ Apul., Met. 5.1; Cato, Orat. fr. 1, ap. Fest. 282 L.; Var., Men. 182 (Gerontodidaskalos) (= Varro, ap. Non. p.86 M. Horace mentions a table with a citruswood leg and a marble top (C. 4.1.17-20).

⁴⁴⁶ Plin., Nat. 13.91-102.

⁴⁴⁷ Plin., Nat. 16.66; id. 16.68; id. 16.185.

⁴⁴⁸ Plin., Nat. 13.102: *De mensis tamen tacuit (sc. Theophrastus), et alias nullius ante Ciceronianam vetustior memoria est, quo noviciae apparent.* (Theophrastos is silent about tables, however, and elsewhere there is no reference which goes back further than Cicero's time, which makes them look like a recent trend.). Theophrastos does indeed mention the wood, in *Historia Plantarum* 5.3.7.

⁴⁴⁹ Var., R. 3.2.4.

⁴⁵⁰ Sen., de Tranquillitate animi 1.7: *Placet minister incultus et rudis vernula, argentum grave rustici patris sine ullo nomine artificis, et mensa non varietate macularum conspicua nec per multas dominorum elegantium successiones civitati nota, sed in usum posita, quae nullius convivae oculos nec voluptate moretur nec accendat invidia.* (My favourite servant is an untrained and inexperienced

Cupressus - cypress⁴⁵¹

Cypress is mentioned only twice in relation to furniture. According to the commentator Porphyrio, a passage in Horace (Ars 330-332) relates to a scroll-chest: the cypress wood protects the writings against damage from insects. This is due to the strong scent given off by the high level of resin in the wood.⁴⁵²

(H)ebenus - ebony⁴⁵³

Ebony seldom appears in the written sources and is only once mentioned in relation to furniture. Its rarity is confirmed by Apuleius.⁴⁵⁴ The wood, which had to be imported from India and Ethiopia,⁴⁵⁵ was deemed a great luxury.⁴⁵⁶ Meiggs (1982, 286) thinks that a passage in Ovid (Met. 11.610), in which ebony is mentioned in combination with furniture, has been taken straight from Greek literature. As justification for this view he makes suspect use of the *argumentum ex silentio*: that ebony was not a popular wood amongst the elite because it never appears in Roman satire. In our view, since *Citrus* wood probably served as the epithet for great luxury, any mention of ebony would have been superfluous.

Fagus - beech⁴⁵⁷

Contrary to what one would expect (since it is relatively strong, easy to work and cheap), beech is mentioned only once in relation to furniture. The tree was very common on the Italian peninsula.⁴⁵⁸ Martial (2.43.10) juxtaposes a beech table with a *mensa citrea*, thereby suggesting that simple pieces of furniture were made of this inexpensive wood. Columella (12.47.5) mentions small beech chests.

Ficus - fig⁴⁵⁹

Horace (Sat. 1.8.1-3) mentions the trunk of a fig tree from which one could make a bench or a statue of Priapus, according to taste. However, Porphyrio, in his commentary on this passage, rightly observes that the wood is not suitable for making such objects.

Ilex - holm oak

The word *illex* probably refers to the holm oak.⁴⁶⁰ Although it can be assumed that this wood was used a great deal for furniture, it only appears twice in the written sources in this regard. Pliny mentions an oaken table with a *Citrus* veneer which was owned by the Emperor Tiberius.⁴⁶¹

house slave, my favourite silver is my father's heavy country set without a maker's stamp, and my favourite table does not attract attention with its spectacular grain, nor is it renowned amongst the bourgeoisie for the pedigree of its previous owners, but it is a table to be used, which will not distract the eyes of the company nor provoke voluptuousness and jealousy.) Tert., de Pallio 5.5 calls this wood structure *lignas maculas* (flecked or mottled wood).

⁴⁵¹ *Cupressus sempervirens*, cf. Blümner 1879, 257-258, Giordano 1980, 163-164, Meiggs 1982, 293-294. The wood grows on the Apennine peninsula and is still used today to make furniture. Cf. Plin., Nat. 16.139-141.

⁴⁵² Vitr. 2.9.13.

⁴⁵³ Giordano (1980, 420) identifies this wood with *Diospyros crassiflora* Hiern, which now grows in Nigeria and the Cameroon. Cf. also Blümner 1879, 258-259 and Meiggs 1982, 282-286.

⁴⁵⁴ Apul., Apol. 61: *hebeni loculos ... ex illa potius materia rariore et durabiliore uii faceret adhortatum* (an ebony box ... he instructed him rather to make the statuette out of this rarer and more expensive wood).

⁴⁵⁵ Isid., Orig. 17.7.36; Mela 3.80; Plin., Nat. 6.197; id. 12.17; Verg., G. 2.116-117.

⁴⁵⁶ Luc. 10.117; Ov., Met. 11.610.

⁴⁵⁷ *Fagus sylvatica*, cf. Blümner 1879, 250, Giordano 1980, 159; Meiggs 1982, 295. The tree currently grows in the Alps and the Apennines. It can reach a maximum height of 38 m. The heart wood is quite dense and the colour is a light pink-brown. Beech is widely used in furniture today. For beech in shipbuilding cf. Rival 1991, 64-66.

⁴⁵⁸ Theophrastos, Historia Plantarum 5.8.3 refers to *Latium* as an area rich in beech.

⁴⁵⁹ Cf. Giordano 1980, 177

⁴⁶⁰ Adjective: *ilign(e)us*, *iliceus*. Cf. Blümner 1879, 263-264 and Giordano 1980, 165. The holm oak nowadays grows on the Italian islands and in Puglia. The wood is very heavy and difficult to work.

⁴⁶¹ Plin., Nat. 13.94.

Terence mentions oak in connection with bed legs.⁴⁶² Another word, *quercus*, also appears meaning 'oak', although it is not used in relation to furniture. It is difficult to grasp the precise difference between the two terms in the Latin texts.

Nux - walnut

Nux, which can be identified as walnut (*Juglans regia*),⁴⁶³ is mentioned by Juvenal as a wood for simple dining tables.⁴⁶⁴ The tree grew locally.

Olea - olive⁴⁶⁵

We encounter olive wood only in Cicero (Div. 2.86) who mentions a small chest made of it. The twisted way in which the tree grows, together with its modest girth, make olive suitable only for smaller artefacts.⁴⁶⁶

Salix - willow⁴⁶⁷

Ovid mentions willow in connection with bed legs and a bed, thereby implying the plainness of the furniture.⁴⁶⁸ Pliny (Nat. 16.174) mentions willow rods as the material for wickerwork in *cathedrae* (seats with backrests).

Terebinthus - terebinth⁴⁶⁹

The only reference to a piece of furniture made from terebinth comes in Propertius (3.7.49-50), who mentions it as the material for a bed.

Tilia - lime⁴⁷⁰

Lime appears only in Columella (R. 12.47.5), as a wood for small chests.

4.4.2 Analyses of samples from Herculaneum

In July 1991 permission was granted to take some fifty wood samples from furniture in Herculaneum. One sample was also taken from a bed leg in the Casa del Fabbro (I 10,7) at Pompeii.⁴⁷¹ These samples were subjected to analysis by a binocular microscope and by a microscope lit from above. This apparatus proved very good for the study of soft wood. For hard wood (and for further examination of the soft wood) a JEOL JSM T 300 scanning electron microscope was used (15 kv.), the samples first being coated with a fine film of gold using a Balzer's sputter unit. This method caused no problems as far as the softwoods were concerned, but the hard wood could not initially be studied due to random light flecks caused by the layer of

⁴⁶² Ter., Ad. 585.

⁴⁶³ The wood is solid and durable, easy to work and is still used for furniture today. Cf. Blümner 1879, 293; Giordano 1980, 182; Meiggs 1982, 421. For walnut in ship building cf. Rival 1991, 62-64.

⁴⁶⁴ Iuv. 11.117-119: *Illa domi natas nostraque ex arbore mensas/ tempora viderunt; hos lignum stabat ad usus,/ annosam si forte nucem deiecerat Eurus*. (In those days one saw home-made tables from local woods; if the south-west wind happened to bring down an old nut-tree, that is how the wood was used.

⁴⁶⁵ Adjective: *oleagin(e)us*. *Olea europea*, cf. Blümner 1879, 280, Giordano 1980, 183-184. The tree is still found in Italy and can grow to 15 or 20 m. high. The wood is very durable, but only small objects can be made from it since the trunks are not thick. Today the wood is used in Italy for cabinet-making, carving and turning.

⁴⁶⁶ Cf. Plin., Nat. 17.30.

⁴⁶⁷ Cf. Blümner 1879, 294 and Giordano 1980, 198-199. This wood is indigenous. Adjective: *saligin(e)us*.

⁴⁶⁸ Ov., Met. 8.656 and 8.659 respectively.

⁴⁶⁹ *Terebinthus* (*Pistacia terebinthus* L.), cf. Blümner 1879, 290, Giordano 1980, 203-204. The variety still grows in Italy today and is used for fine cabinetwork.

⁴⁷⁰ Adjective: *tiliagineus*. *Tilia cordata* Mill or *Tilia platyphylla* Scop.?, cf. Blümner 1879, 278; Giordano 1980, 204. The wood was imported from Corsica and Paphlagonia in Asia-Minor; it grows today in the Alps and the Apennines. The wood is whitish in colour, quite soft and is still used for carving and turning.

⁴⁷¹ The exact source of the samples is always indicated in the catalogue under code 3.3.1.

modern paraffin-wax (which was applied to the furniture as a preservative following their discovery). After dissolving the wax in xylene and applying another film of gold with the sputter unit, the samples could be successfully examined with the scanning electron microscope. Those samples which could not be identified seem to have contained no wood and to have come from the modern wax layer.⁴⁷² The tables given by F.H. Schweingruber (1978 and 1990) were used for the identification of wood types, along with the computer programme 'Guess'.⁴⁷³ The results are summarized in the table below.

Item	Wood/no. samples
	<i>Abies alba</i>
Casa del Tramezzo di Legno (III 10-11), bed (cat.no. 1; figs. 11-12):	5
Casa a Graticcio (III 13), 1st floor, room 5, bed (cat.no. 2):	5
Casa a Graticcio (III 13), 1st floor, room 5, child's bed (cat.no. 3)	1
Casa a Graticcio (III 14), 1st floor, room 1, bed (cat.no. 4):	3
Casa a Graticcio (III 14), 1st floor, room 2, <i>biclinium</i> (cat.no. 5)	4
Casa dell'Alcova (IV 3-4), <i>biclinium</i> (cat.no. 6):	3
<i>Insula V</i> 17, bed (cat.no. 9):	2
<i>Insula Orientalis II</i> 9, couch (cat.no. 12):	8
<i>Insula Orientalis II</i> 10, couch (cat.no. 13):	1
stool (cat.no. 23):	1
<i>Insula V</i> 6, amphora rack (cat.no. 31):	3
<i>Insula Orientalis II</i> 9, amphora rack (cat.no. 33):	1
Casa a Graticcio (III 14), 1st floor, room 1, small cupboard (cat.no. 35):	2
	<i>Quercus</i>
<i>Insula Orientalis I</i> 1a, cradle (cat.no. 11):	1
	<i>Juglans</i>
Casa del Mobilio Carbonizzato (V 5), table, top (cat.no. 15; figs. 13-14):	1
	<i>Buxus</i>
Casa del Mobilio Carbonizzato (V 5), table, leg (cat.no. 15; figs. 15-17):	1
	<i>Carpinus</i>
<i>Insula VI</i> 19-22, Collegio degli Augustali, table, leg (cat.no. 17; figs. 18-19):	1
	<i>Acer</i>
<i>Decumanus Maximus</i> , chest, back (cat.no. 41):	1
	Unidentifiable
<i>Insula V</i> 17, bed (cat.no. 9):	1
<i>Insula Orientalis II</i> 9, bed (cat.no. 12)	1
<i>Insula V</i> 17, cupboard (cat.no. 37):	2

⁴⁷² A method resembling that described here, and with which we became acquainted only after our analyses of the Herculaneum samples, was applied by P. Warnock and M. Pendleton (1991, 107, 110) to wood from the diptych from the Ulu Burun shipwreck, which they identified as *Buxus*. A greasy substance found on the surface was here removed by rinsing the sample several times in distilled water and warm xylene, then in a solution of xylene and amylacetate, and finally in amylacetate alone. The sample was then dried using the critical point. For the rest the two methods correspond.

⁴⁷³ Computer Assisted Multiple Entry Key for Computer Assisted Wood Identification; wood databases compiled by Dr. E.A. Wheeler, program designed by Dr. C.A. LaPasha.

<i>Insula Orientalis</i> I 1a, table (cat.no. 19)	1
<i>Decumanus Maximus</i> , bench (cat.no. 26):	1

Fagus

Pompeii, Casa del Fabbro, bed leg	1
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Samples from only 18 of the 41 pieces preserved in Herculaneum were analyzed (permission for more samples was not forthcoming). However, on the basis of these results we can conclude (with the necessary caution) that the furniture in the town was predominantly made of wood from the silver fir (*Abies alba*), with occasional use made of hardwood. The breakdown of the samples is *Abies alba* 39, hardwood 5, unknown 6. All the identifiable samples taken from beds and couches are *Abies alba*, and these items were probably made almost entirely from this wood. The hypothesis seems to be confirmed whenever more than one sample from the same bed or couch is analyzed (which in some cases was allowed). Only the legs (although these have survived in only a few of the beds) and the wood mosaic seem to involve other types of woods. *Abies alba* is also used for a stool (except for the wood mosaic on the seat), two amphora racks and a cupboard. This wide distribution seems to indicate that other types of wood were only used for specific applications. We should mention here that *Abies alba* is often the wood found in Pompeian wax-tablets.⁴⁷⁴ In modern Italy silver fir is little used for furniture, the wood being seen as unsuitable (Giordano 1980, 153-154). However, there is wide variation in the quality of the timber. The tree usually grows on mountain sides and, as Meiggs (1982, 119) writes: 'Quality depends largely on climate, temperature and soil, and of the four varieties [of fir] in the Mediterranean area *Abies alba*, the silver fir, which was limited to Italy and Sicily, and Macedon, had the highest reputation.' It is very possible that the slopes of Vesuvius before the eruption were partly covered with silver fir. There would thus have been a plentiful supply of the timber and, given the fertile volcanic soil, the quality must have been quite good.⁴⁷⁵ Timber may also have been taken from other hill sides close to the volcano. We will only be able to identify the precise location of these forests when we have access to data from ground borings.

Four of the smaller pieces of furniture are made from other types of wood. In comparison to the large pieces in *Abies alba*, these are objects assembled from timber of modest dimensions: a cradle (oak/*Quercus*), two tables (one with box/*Buxus* legs and a walnut/*Juglans* top, the other made of hornbeam/*Carpinus*) and a chest (maple/*Acer*). The structural parts of these small pieces needed to be fairly sturdy. So did the components which were the carved and turned (for which fir is unsuitable): the turned bed leg from Pompeii (*beech/Fagus*) and the carved table legs were all in hardwood. The indications are that most of these woods had to be imported to the area, but none of them had far to come since all were available in Italy. *Quercus* and *Juglans* are also found in the boat which was excavated on the beach at Herculaneum in 1982.⁴⁷⁶ A wax tablet made of *Buxus* has come to light in the Casa del Bicentenario.⁴⁷⁷ *Quercus* and *Fagus* have been found in Pompeii, the latter in large quantities.⁴⁷⁸ Yet in the written sources there is no relation with

⁴⁷⁴ Cf. Varone 1990, 148-149.

⁴⁷⁵ Prof. Rosanna Caramiello of the Dipartimento di Biologia Vegetale of the University of Turin presented the results of her research in the auditorium of the Pompeii excavations on 3 July 1992. She had analyzed a number of wood samples taken from the *Terme Suburbane* in Herculaneum, the majority of which turned out to be *Abies alba*. She too suggests that the slopes of Vesuvius could have been covered with these trees.

⁴⁷⁶ Cf. Ferroni/Meucci 1989, 110; see also note 3 above.

⁴⁷⁷ Cf. Pugliesi Carratelli 1950, 278. For boxwood wax-tablets from other places see: Warnock/Pendleton 1991, 107.

⁴⁷⁸ Cf. Bonghi Jovino 1984, 352-355 and tav. 184.

furniture established for either *Carpinus* (hornbeam) or *Quercus*.⁴⁷⁹

In almost all cases, whenever more than one sample was taken from a single piece of furniture the same type of wood was found. In the case of the furniture still *in situ* this was always *Abies alba*. However, from the smaller pieces now in the Maggazzino Archeologico we were allowed to take two samples in one instance only. In this case it appears that two types of wood were used in a table: box (*Buxus*) for the legs and walnut (*Juglans*) for the top. The first of these is a wood which lends itself well to carving and the second has an attractive mottled grain. It is apparent from eight tables found in the tumulus MM in Gordion that this combination occurred more often in antiquity.⁴⁸⁰ This one example suggests that there are probably different woods used in other tables at Herculaneum. The same may well be true of beds and couches (although this research could not confirm it) since we can assume that the bed legs were turned, and for this *Abies alba* would not have been used. We would expect a hardwood like *Buxus* or *Fagus*, as in the Pompeii sample. We find *Abies alba* again in the stool, but here the veneer is clearly from another wood, although precisely what kind is not established. In the chest we find *Acer* and in all the other storage pieces which were analyzed we again find *Abies alba*.

4.4.3 Conclusion

When we compare the data from the antique texts with the results of the analyses of the Herculaneum wood samples, a strange contradiction emerges. We find that of the texts which name woods in relation to furniture more than half mention only one type of wood and one piece of furniture: the *mensa citrea*. It is clear from the context of these references that this type of table was the definitive luxury article which only a few could afford. Read without discrimination, the written sources might give the impression that *mensae citreae* were very common compared with furniture made of other types of wood, for about these they are virtually silent. It is also obvious that ordinary oak (*Quercus robur*) must have been used for furniture, but here again antique authors have nothing to say on the subject. The picture to be derived from the texts is thus a misleading one. Because one type of table, made of a particular type of wood, happens to be a conventional epithet for great luxury, these tables appear with some frequency while virtually no mention is made of the wood used in ordinary furniture.

These analyses of wood samples give an entirely different impression. They tell us that silver fir was widely used for furniture in Herculaneum. It was clearly considered quite adequate for the task, even though more suitable hardwoods were available in Italy. Silver fir must have been present in large quantities in the immediate vicinity of Herculaneum. Transport costs would have been low and the price of the end product could thus be kept down. It was therefore the timber of choice. Pliny (Nat. 16.225) thought *Abies* very useful for interior woodwork, easy to plane and the best of all woods to glue. In Herculaneum other woods were only used for specific purposes and were imported where necessary. It is here that the literature can help us. Virgil in the *Georgics* (2.449-450), for example, points out the suitability of boxwood for turning, and Pliny (Nat. 16.231) tells us the types of wood which were best for veneer. The hardwoods found in the Herculaneum furniture confirm their account. The fact that other woods, such as oak (*Quercus*) and hornbeam (*Carpinus*), are not mentioned as materials for furniture in the written texts illustrates the dangers of over-reliance on literary sources. Of course, the samples from Herculaneum are not on their own conclusive evidence for wood use in furniture in the wider Roman world. However, we can still draw conclusions which have a wider application. One is that local timber would have

⁴⁷⁹ *Carpinus*: Plin., Nat. 16.67; id. 16.73-74; id. 16.226; Vitruv. 2.9.12; cf. Blümner 1879, 294-295; (not in Meiggs 1982); it is a very hard and compact wood which is used in building and in carpentry; the tree still grows in Italy, cf. Giordano 1980, 160. *Quercus*: Plin., Nat. 16.17; cf. Blümner 1879, 260-266 (with references to the antique literature), Meiggs 1982, 45-46 and 295, Giordano 1980, 194; it was probably present in great quantities on the Apennine peninsula.

⁴⁸⁰ Cf. Aytug 1988, 366-367, who performed the analyses.

been used for furniture providing it was available in sufficient quantity. Another is that the Romans undoubtedly understood the specific properties of a wide range of woods. This in turn suggests that woods other than those locally available would have been chosen for particular applications.

4.5 Tools for cabinetmaking

In this section we present an alphabetical survey of the tools used in Roman carpentry and cabinetmaking, based on both written and archaeological sources. Tools for working wood have been found throughout the former Roman Empire. Usually only the metal elements survive, the wooden parts having decayed. These finds reveal the existence of a wide range of tools, which tells us that carpenters in general and cabinetmakers in particular would have had access to the appropriate tool for every phase of the production process. Fundamental work on tools, including woodworking tools, has been done by W. Gaitzsch.⁴⁸¹ There are also important studies by H. Blümner (1879), W.F. Petrie (1917, esp. 38-41), and H. Jacobi (1897, 204-216 and figs. 27-29).⁴⁸² The first two deal with carpentry tools in general, while Jacobi takes the finds made at the 'Saalburg' in Germany as his starting point.

As well as remains of the tools themselves, there are also numerous contemporary depictions. A collection of these has been published by G. Zimmer (1982, 31-33 and No. 56-74) and shows carpenters at work as well as the individual tools. The distinction between tools for working stone and those for wood is not always clear.⁴⁸³ It is possible that almost identical implements were used for the two trades. The same problem arises for the standard measuring instruments which carpenters used for marking out and assembling the various elements of a piece of furniture. These are depicted on the gravestones of several craftsmen,⁴⁸⁴ but because the same devices were used by builders and masons we can only be certain that a given gravestone refers to a carpenter when the inscription explicitly says so or when tools unique to carpentry also appear.

A third source of information is provided by texts which refer to woodworking and furniture making. These seldom go into the form of particular tools, but they sometimes tell us a lot about their names and function. An important source for the Roman terminology of the subject is a passage in Pliny which lists the tools and implements for woodworking (*fabrica materiaria*).⁴⁸⁵ He mentions the saw, the adze, the plumb-line, the drill, (cow-)glue and fish-glue, the square, the *libella* (the forerunner of our level) the lathe and the metal clamp. Other authors add compasses (*circinus*) to this list.⁴⁸⁶ There is further reference in literature to the hammer (*malleus*), the chisel (*scalprus*), the rasp (*scobina*) and the file (*lima*). Two measuring devices are also mentioned, the rule (*regula*) and the line (*linea*).⁴⁸⁷ However, the diversity encountered in original finds (various types of saw, drill, chisel etc.) and in the marks left on wooden artefacts is reflected scarcely if at all in the texts. The probable explanation is that the writers are addressing a general public, and

⁴⁸¹ Gaitzsch 1978; 1979; 1980; 1984A, 379-400; 1985; 1986.

⁴⁸² Richter's (1966, 124) review of tools is very limited.

⁴⁸³ Cf. Gummerus 1913, 85 and his Cat. 48-56; Zimmer 1982, 149 and 161-179.

⁴⁸⁴ For gravestones showing tools see Felletti Maj 1977, 235 and tav. LXIV fig. 156.

⁴⁸⁵ Plin., Nat. 7.198: *Fabricam ferrariam invenerunt Cyclopes, figlinas Coroebus Atheniensis, in iis orbem Anacharsis Scythes, ut alii, Hyperbius Corinthius. Fabricam materiariam Daedalus et in ea serram, asciam, perpendiculum, terebram, glutinum, ichthyocollam; normam autem et libellam et tornum et clavem Theodorus Samius, mensuras et pondera Phidon Argivus aut Palamedes, ut maluit Gellius.* (Metalworking was discovered by the Cyclops, fired pottery by the Athenian Koroibos, and the potter's wheel by the Scythian Anacharsis, according to others by the Corinthian Hyperbius; woodworking was discovered by Daedalus and with it the saw, the adze, the plumb-line, the drill, (cow-)glue and fish-glue, the setsquare, the level, the lathe and the clamp were invented by Theodoros of Samos, but sizes and weights by Phidon of Argos or by Palamedes, which Gellius thinks more likely.). The Cn. Gellius referred to by Pliny was a writer of *Annales* who lived in the 2nd century B.C..

⁴⁸⁶ Hyg., Fab. 274; Isid., Orig. 19.19.9; Serv., A. 6.14; Sidonius Apollinaris, Epistulae 4.3.5.

⁴⁸⁷ Lucr. 4.513-516.

are therefore merely reporting current usage. Nor is it surprising that they say little about the form of tools. This would have been quite unnecessary since most readers would have known what a saw, a pair of compasses or a *libella* looked like.

Most tools were made of metal and had wooden handles.⁴⁸⁸ Pliny and Columella mention the best woods for the task.⁴⁸⁹ A few original handles have survived, many of which are decorated with turned rings. These have a functional as well as a decorative purpose (as in modern tools): the better the grip, the easier to use.

It is indeed remarkable how little carpentry tools have changed over the centuries. This is presumably because the form of a tool derives directly from its function,⁴⁹⁰ and once a tool has acquired the form which best does the job there is little reason to change it. The close correlation between form and function may also explain the fact that only very minor differences are found between tools from the Apennine peninsula and those from even the most remote provinces of the Empire. The Roman army must have played an important role in the rapid dissemination of tool forms. Once perfected, a tool could quickly reach the most far-flung province. The Romans also adopted the most efficient tools developed by others. This almost certainly happened with the Celtic drill (*terebra gallica*), which was introduced at the beginning of our era (see § 4.2.4).

Carpentry tools undoubtedly existed in central and northern Italy before the rise of Rome but they seem to have been very simple, even primitive. The origins of the more sophisticated tools should therefore be sought in Greece and in Southern Italy (*Magna Graecia*)⁴⁹¹. It was the Romans who perfected these tools, probably adding the carpenter's hammer and the plane to the general stock. Wasowicz (1966, 226 and 233) considers that the Hellenistic period is more important for the development of cabinetmaking than the Roman period, especially in terms of tools. This is partly because new forms of saw were developed at that time. She observes a standardization developing over the Roman period as well as a reduction in the quality of cabinetmaking. We do not share this view. It was precisely during the Roman period that so many tools were perfected.

The following survey covers both tools and measuring instruments. The emphasis here is on implements used for cabinetmaking and the finer forms of carpentry. For rough woodwork (i.e. the felling of trees, the conversion of timber into planks etc.) with tools such as the *securis* (axe), *bipennis* (double-headed axe) and *dolabra* (pickaxe), please refer to Blümner (1879, 297-306).

Because examples of all the tools mentioned here have been published elsewhere, no illustrations are included with this study.

Ascia - adze⁴⁹²

The term *ascia* was used for a small axe or hatchet and for the adze, a hatchet with transverse blade which was used in fine woodwork to shape rounded elements into roughly their final form. A variant of this tool (or rather, the same tool with a special attachment) was used to smooth surfaces, indeed to almost polish them. In this form the adze should be regarded as the forerunner of the plane and Gaitzsch has helpfully introduced the term *Ascia-Hobel* (adze-plane) to describe

⁴⁸⁸ It is possible that the iron elements of tools were tempered ('steel'), a process based on the absorption of carbon into the iron, cf. Epprecht/Schaller 1981, 29-31.

⁴⁸⁹ Plin., Nat. 16.230: *Sunt vero et parvi usus fabrilium ministeriorum insignes, ideoque proditum, terebris vaginas ex oleastro, buxo, ilice, ulmo, fraxino utilissimas fieri, ex iisdem malleos, maioresque e pinu et ilice.* (There are also however well-known minor uses for wood in carpentry tools. Thus it is handed down that the best drill handles are made of wild olive, boxwood, ilex, elm and ash, and for hammers the same woods, with pine and ilex for larger hammers); Col. 11.2.92: *Tum etiam per lucubrationem ferramenta acuere, et ad ea facere vel facta manubria aptare; quorum optima sunt ilignea, deinde carpinea, post haec fraxinea.* (It is also best to sharpen iron tools, and to make new handles or fit existing ones, at night; the best kind are those made from ilex, and then from hornbeam, and after them ash).

⁴⁹⁰ Cf. Gaitzsch 1980, 250; Gaitzsch 1985, 171.

⁴⁹¹ Cf. Matthäus 1984, 155-156 and Gaitzsch 1985, 176.

⁴⁹² Cf. Gaitzsch 1980, 38-46; cf. also Petrie 1917, 16-18 and pl. XV-XVIII.

it. After the plane had been developed to approximately its present form the adze would have been mainly used for shaping curved surfaces. This was not yet possible with the antique plane.

The adze-plane was already being used for smoothing timber at the time the *Lex duodecim tabularum* was written down (450 B.C.). This is apparent from an extract from one of these laws quoted by Cicero.⁴⁹³ In the other sources which use the term it is more difficult to distinguish whether 'axe' or 'adze' is meant, but the texts make it clear that a tool with a sharp edge is involved.⁴⁹⁴

Several reliefs which refer to the myth of Daedalus and Icarus (and several grave reliefs) show how the adze and the adze-plane were handled.⁴⁹⁵ Those adzes which have been found reveal that the other end of the metal head was usually shaped into a hammer form, giving the tool a dual function.⁴⁹⁶

Circinus - compasses

Various texts make it clear that compasses were used both as a measuring instrument and for marking out circles in carpentry.⁴⁹⁷

They are evident in contemporary depictions and several original examples have been found.⁴⁹⁸

Cuneus - wedge

The wedge, originally used for splitting wood, was early supplanted by the saw.⁴⁹⁹ Metal wedges were then used as aids to sawing, broadening the cut and thus easing the passage of the saw.⁵⁰⁰

Libella - level

The *libella*, the forerunner of the modern level, was used to establish and mark out horizontal surfaces. The nature of the instrument made it impossible to apply to vertical surfaces (for which the plumb line was used). The *libella* was made from three battens, two of which were joined at the top to create the legs of an isosceles triangle. The third spanned them horizontally half way up,

⁴⁹³ Cic., Leg. 2.59: *rogum ascia ne polito*. (Wood for the funeral pyre should not be smoothed off with an adze).

⁴⁹⁴ Further texts relating to the *ascia* are: Apul., Met. 3.22 (proverbial); Don., Ter. Eun. 515; Isid. Orig. 19.19.12; Palladius, de Agricultura 1.42.3; Petr. 74 (proverbial); Plin., Nat. 16.207; Tert., Apol. 12.4; Vegetius, Epitoma rei militaris 2.25; Vitruv. 7.2.2; Vulgata, Hieremias 10.3.

⁴⁹⁵ Daedalus and Icarus: A relief in the Villa Albani: Bol 1992, 125 Nr. 296 and Taf. 84; (Bol 1989, 405 Nr. 128 and Taf. 229-230 gives a second relief in the Villa Albani; this piece has many modern additions, which include the *ascia*, and is therefore not helpful here. cf. LIMC 3.2, 239 Nr. 23a, where the piece is judged as authentic); relief in the Museo Regionale in Messina: cf. LIMC 3.2, 240, Nr. 35. Gravestone of P. Beitenos Hermes in the Louvre in Paris, inv. 934 (adze-plane), cf. Liversidge 1976, 163 fig. 271 and Gaitzsch 1980, Taf. 62, 300. Other examples are the gravestones of P. Ferrarius Hermes, found at Pisa in 1566 and now in the Museo Archeologico in Florence, cf. Gaitzsch 1980, Taf. 61; gravestone of P. Celerius Amandus, *in situ* at Ostia, Reg. IV, Cardo Maximus, inv. 1258, cf. Gaitzsch 1980 Taf. 62, 301; grave stele in the museum at Larissa, cf. Blümner 1889, 158; grave of the Licinii, cf. Zanker 1975, 298-299 and 301 Abb. 36; relief in the Museo Gregoriano Profano of the Vatican Museums: man making a furniture leg with an adze, cf. Zimmer 1982, 139-140 No. 57.

⁴⁹⁶ Examples from Pompeii: Naples, Museo Nazionale inv. 3431, 3433, 120719; in the depot at Pompeii: inv. 959 (Casa di Obellius Firmus), 3323, 5133 (from I 10, 1). Pieces from the Kastell Altstadt near Miltenberg, cf. Gaitzsch/Matthäus 1981, 21-23; in 1854 the British Museum acquired a miniature version of a combined adze and hammer from a tumulus in Sussex (inv. 54.12-27.77), cf. Manning 1966, 50-58 and fig. 2a; miniature adzes from a grave in Cologne, cf. Behrens 1939, 56, 2.1 and 2.2.

⁴⁹⁷ Hyg., Fab. 274.14; Serv., A. 6.14; Sidonius Apollinaris, Epistulae 4.3.5; Vitruv. 1.1.4; id. 1.2.2; id. 10.4.1 (in architecture). Ovid (Met. 8.247-249) describes the form of the tool, as does Isidorus (Orig. 19.19.9-10).

⁴⁹⁸ Original compasses: Naples, Museo Nazionale inv. 76686; 76696 cf. Boriello et al. 1988, 194-195 no. 141. Examples of depictions: on a grave stele in Aquileia, Museo Nazionale inv. 1231, cf. Zimmer 1982, 150 Nr. 70; gravestone of a cart builder from Priolo, now in the Museo Nazionale at Syracuse, cf. Zimmer 1982, 142-143 Nr 61; grave relief from Ostia, inv. 1258, cf. Zimmer 1982, 146-147 Nr. 65.

⁴⁹⁹ Cf. Gaitzsch 1980, 116-119. Originals from Pompeii: Pompeii, depot inv. 305 and 16957, and Naples, Museo Nazionale inv. 123600. Texts relating to this tool are: Cato, Agr. 10.3; id. 11.4; Ov., Met. 11.514-515; Plin., Nat. 16.206; Serv., A. 7.509; Verg., G. 1.143-145: *Tum ferri rigor atque argutae lammina serrae / nam primi cuneis scindebant fissile lignum - / tum variae venere artes*. (Then came the hardness of iron and the blade of the scraping saw - because the first men split the fissile wood with wedges - then came manifold techniques.); Verg., A. 6.179-182; id. 7.508-510.

⁵⁰⁰ Cf. Adam 1984, 93-94 and figs. 194-196.

producing the form of a capital A. A plumb line was hung at the apex. When the line hung dead centre over the cross piece the two legs were at the same height and the surface beneath them was exactly horizontal. By shifting the instrument around, a large surface could be checked for level. The most important passage bearing on the form of the *libella* is to be found in Vegetius, who compares a specific order of battle to the *libella* and to the letter A.⁵⁰¹ *Libellae* are depicted, amongst other places, on three grave steles now in the Capitoline Museums in Rome.⁵⁰² An original wooden *libella* is preserved in the National Museum in Cairo.⁵⁰³

Lima - file, *scobina* - rasp⁵⁰⁴

Amongst the tools available for finishing off both straight and curved surfaces were files and rasps. The required fineness or coarseness of the finish defined the difference between the two tools. The coarseness and form of each individual tool was also determined by its function.⁵⁰⁵ The term *scobina* refers to rasps and coarser files and several texts mention them in relation to woodworking.⁵⁰⁶ Some antique texts also discuss the file as a rough-surfaced tool used for polishing, but here they are referring to working materials other than wood.⁵⁰⁷ Such tools could be used to roughen smooth wooden surfaces so as to give a better bond for glued veneer.⁵⁰⁸

The *scobina* was also used to make grooves or slots in wood. Pliny tells us that the tool had a roughened metal surface (Nat. 11.180). Isidorus and Varro speak of its function as a rasp.⁵⁰⁹

Linea - carpenter's line

According to Isidorus, the name *linea* is derived from *linum* (flax), the material from which it was made.⁵¹⁰ The *linea* was used as a measuring instrument to mark lengths⁵¹¹ and thus had the same function as the *regula*, which was probably shorter and rigid. The *linea* is sometimes mentioned in relation to building, for marking out the positions of columns, for example.⁵¹²

Malleus/malleolus - hammer/mallet⁵¹³

Various kinds of hammer were used in carpentry. Wooden handles carried metal or wooden heads according to the task in hand. Livy (27.49.1) mentions hammers for striking chisels specifically in relation to carpentry. Only Columella (3.6.3) discusses the form.⁵¹⁴ An original hammer with

⁵⁰¹ Vegetius, *Epitome rei militaris* 3.20: *Ad similitudinem autem A litterae vel libellae fabrilis acies in hoc dimicandi genere componuntur.* (In this type of fighting the battle lines are arrayed in the form of a letter A or a carpenter's level.). For the use of the *libella* see also: Lucr. 4.515: *et libella aliqua si ex parti claudicat hilum.* (and the level if it leans a bit to one side or the other); Var., R. 6.6; Vitr. 1.6.6; id. 3.4.5; id. 3.5.8; other texts which mention the instrument are: Col. 3.13.12; Paul., Fest. 65 L.; Plin., Nat. 7.198; id. 36.172; Vitr. 7.1.3; id. 7.3.5.

⁵⁰² Cf. Stuart-Jones 1912, 73-75 and pl. 15 (II 4, II 6, II 7).

⁵⁰³ Cf. Sameh 1980, 52-55.

⁵⁰⁴ Cf. Gaitzsch 1980, 47-62.

⁵⁰⁵ Gaitzsch (1980, 49 and 52-60) gives examples of files which are rectangular, square, triangular, round and semi-circular in section.

⁵⁰⁶ Var., L. 7.68: *In <N>ervolaria (sc. Plautus): "scobina ego illun <c> actutum adrasi <s> enem". Scobina a scobe; lima enim materia <e> fabrilis est.* (In the *Nervolaria* (writes Plautus): "I immediately scraped off this old man with a rasp. *Scobina* comes from *scobes* (filings); for the *lima* (wood-file) is for timber.); Larg. 141.

⁵⁰⁷ Pl., Men. 85-86 (stone); Plin., Nat. 28.148; 37.109 (precious stones); Vitr. 7.11.1 (bronze). The *lima* is also mentioned by: Plin., Nat. 11.172; Quint., Inst. 2.12.8; Sen., Ep. 65.13.

⁵⁰⁸ Pompeii: the originals in the Museo Nazionale have no inventory number, cf. Gaitzsch 1980, Taf. 12, Nr. 52-54.

⁵⁰⁹ Var., L. 7.68; Isid., Orig. 19.19.5. The tool is also mentioned by Tertullianus, *Apologeticum* 12.4.

⁵¹⁰ Isid., Orig. 19.18.3: *Linea genere suo appellata, quia ex lino fit.* (*Linea* is named after its nature, because it is made of *linum* [flax]).

⁵¹¹ Cf. Vitr. 7.3.5.

⁵¹² In architecture: Vitr. 4.4.3; Vulgata, Reges 3.7.15; Cato, Agr. 14.3; Cic., Q. fr. 3.1.2. The *linea* is also mentioned in: Gel., pr. 11; Palladius, de Agricultura 3.9; Quint., Inst. 3.6.83; Vitr. 4.2.2.

⁵¹³ Cf. Gaitzsch 1980, 72-102.

⁵¹⁴ Other uses for hammers appear in: Pl., Men. 402-403 (shipbuilding); for metalwork: Isid., Orig. 19.7.2; id. 19.18.4; Plin., Nat. 34.144; id. 37.59; also of interest is Sen., Ep. 90.13.

a metal head was found at Herculaneum.⁵¹⁵ The carpenter's hammer, a highly perfected tool which is still in use, is probably a Roman invention. An iron head was attached to a wooden shaft. One side had a large flattened face with which to strike nails, the other was thin and flat with a wedge-shaped opening to help remove nails from wood.⁵¹⁶

The wooden hammer (or mallet) was used as an auxiliary tool with chisels and gouges. Both the head and the shaft were of wood. An original mallet has been found in Mainz.⁵¹⁷ A wall painting in the Casa dei Vetti in Pompeii shows a carpenter making a hole in a plank with a chisel in his left hand and a mallet in his right.⁵¹⁸

Norma - square

All kinds of craftsmen, not only cabinetmakers, used various *normae* for marking and checking corners. These could be right-angled, but *normae* at angles other than 90° have also been found. In the written sources the word *norma* generally means a tool for marking right-angles.⁵¹⁹ Isidorus of Seville discusses the form: the tool can be made, he says, by fixing together the ends of three battens of equal thickness, two of which should be two feet long and the third two feet and ten *unciae*, thus forming a triangle.⁵²⁰ The same form is earlier mentioned by Vitruvius (9, pr.6), who provides a much more practical method of construction by adapting Pythagoras (three battens respectively three, four and five feet long, which when fixed together produce a right-angled triangle).⁵²¹ A square with a right-angle and two 45° angles, useful to mark both right-angles and mitres, was found in Canterbury in 1978.⁵²²

Perpendiculum - plumb line

To mark or check vertical lines Roman craftsmen used a plumb-line. Pliny (Nat. 7.198) mentions it as a carpentry tool. None of the texts discuss its form, but we know from archaeological finds that it consisted of a cord to which was attached a conical object with the point facing downwards. Caesar and Vitruvius both describe its function, and the latter refers to its use in building.⁵²³

Regula - carpenter's rule

The *regula*, like the modern rule, was used for measuring and marking straight lines. Several texts describe its form.⁵²⁴ It was probably simply a flat, straight slat, sometimes equipped with a scale.

⁵¹⁵ Cf. Maggi 1985, tav. 51.

⁵¹⁶ Example from Pompeii: Naples, Museo Nazionale, inv. 121169, cf. Gaitzsch 1980, 90-91.

⁵¹⁷ Cf. Klumbach 1961, 98, Anm. 6 (with literature) and Abb. 1: the piece was found in the pile of a bridge in 1881. Cf. Gaitzsch 1980, 86 and Anm. 193.

⁵¹⁸ Pompeii, Casa dei Vetti, *triclinium* P, north wall, in the scene with Daedalus and Pasiphae.

⁵¹⁹ We read about the function in Lucretius 4.513-514: *Denique ut in fabrica, si pravast regula prima/ normaue si fallax rectis regionibus exit.* (Again, like in carpentry, when the first line ruled is wrong and the square misleadingly deviates from the right direction.).

⁵²⁰ Isid., Orig. 19.18.1: *Norma dicta graeco vocabulo, extra quam nihil rectum fieri potest. Conponitur autem ex tribus regulis, ita ut duae sint binum pedum, tertia habeat pedes duos, uncias decem, quas aequali crassitudine politas extremis cacuminibus sibi iungit ut schemam trigoni faciant.* (The *norma* - which is derived from a Greek word - without which nothing can be straight. It is assembled from three battens, two of which are two feet long and the third two feet and ten twelfths, which are smoothed to the same thickness and attached end to end so that they form the figure of a triangle.).

⁵²¹ Other texts in which the *norma* is mentioned are: Plin., Nat. 7.198 (as one of the tools for woodworking); id. 36.72 (in relation to masonry); Quint., Inst. 11.3.141; Vitruvius 7.3.5.

⁵²² Cf. Chapman 1979, 403-405. Other original setsquares: Naples, Museo Nazionale inv. 76689, cf. Boriello et al. 1988, 194-195, cat. 143, and inv. 78321. Depictions: on a gravestone in the Capitoline Museums in Rome, cf. Stuart-Jones 1912, 73 pl. 15, nr. II 6; relief from Pisa in the Museo Archeologico in Florence, inv. 1914, cf. Zimmer 1982, 166 Nr. 90. Chapman (1979, 406 fig. 3.5) also shows an original from Syria in which a *norma* and a *libella* are combined in one tool.

⁵²³ Caes., Gal. 4.17; Vitruvius 7.3.5. The instrument is also mentioned by: Cato, Agr. 20.1; Cic., Q. fr. 3.1.2; Cic., Ver. 2.1.133; Cic., Fat. 10.22; Cic., fr. ap. Non. p. 162.25-163.3 M; Isid., Orig. 19.18.1-2; Plin., Nat. 36.172; Vitruvius 6.8.5. Originals: Naples, Museo Nazionale inv. 76658, cf. Boriello et al. 1988, 194-195, cat. 142 and inv. 76661. Depictions: relief from Ostia, cf. Zimmer 1982, 164-165; relief in the Capitoline Museums, cf. Stuart-Jones 1912, 73, pl. 15 no. II 6.

⁵²⁴ Isid., Orig. 19.18.2; Lucr. 4.513; Rufinus, Oratorum Gregorii Nazianzeni Interpretatio 6.7, p. I, 200, 10; Sen., Ep. 76.14.

Vitruvius (7.3.5) mentions its use for checking linear measurements.⁵²⁵ Several reliefs feature a *regula*.⁵²⁶

Runcina - plane⁵²⁷

The Romans' most sophisticated carpentry tool (and one still in use in broadly the same form) did not have a long history and may only have been invented during the Republic.⁵²⁸ It comprised a wooden or metal box into which a sharpened chisel, slightly protruding from the base, was obliquely wedged. The angle, shape and size of the chisel, could differ according to the job in hand.⁵²⁹ The chisel could be sharpened on one or both sides.⁵³⁰ To allow the shavings to escape there was probably an opening between the chisel and the front of the box.

The earliest known originals come from Pompeii and can be dated from the 1st century B.C.. Other examples have been found in Cologne, the Saalburg, Silchester and Kastell Altstadt near Miltenberg.⁵³¹ There is also a depiction of a plane taken from Tullius' workshop at Pompeii (VI 7, 8).⁵³² The function of the tool (the smoothing of wooden elements) is touched upon by Pliny and Arnobius.⁵³³ A distinction should be drawn between planes used simply for planing and those used to make mouldings. A primitive form, the adze-plane (*Ascia*-Hobel) is described above (see *ascia*).

Scalprum - chisel/gouge⁵³⁴

Chisels were used for notching and cutting holes, and chisels and gouges for modelling decorations and curved surfaces. Both were generally used in conjunction with a hammer. The written sources say little about their form, but more about their function. Isidorus mentions the tool as suitable for making holes and Livy refers to chisels in combination with hammers.⁵³⁵

We find various forms of this tool, the form being determined by the specific function. The wooden handles of five examples have survived, three from Herculaneum and two from Aquileia. They have been made on the lathe and have various ring decorations.⁵³⁶ In woodcarving knives

⁵²⁵ The instrument is elsewhere discussed in: Cic., fr. ap. Non. 162.25-163.3; Palladius, de Agricultura 1.9.4 (in connection with a floor); Plin., Nat. 36.188 (also in connection with a floor) and Vit. 1.2.2 (in connection with drawing) An original *regula*: Naples, Museo Nazionale, inv. 76696. The *amussis*, which is mentioned as a carpenter's tool by Paulus, Fest. 70 L., must be a particular form of *regula*.

⁵²⁶ Examples: on the gravestone of a cart builder from Priolo, now in the Museo Nazionale at Syracuse, cf. Zimmer 1982, 142-143 Nr. 61; on a grave stele in the Museo Nazionale at Aquileia, inv. 1231, cf. Zimmer 1982, 150 Nr. 70; grave stele in the Castello di Sanmezzano, cf. Zimmer 1982, 165 Nr. 88.

⁵²⁷ Cf. Gaitzsch 1980, 103-115. The verb from *runcina* was *runcinare* (to plane). The blade was called a *planum*. Greber 1956, 31-113 in a thorough study of antique planes, gives various sources (p. 9-16) and considers the tool to be a Greek invention (p. 22 and 66-67); he establishes seven main types with additional subdivisions (p. 27-30).

⁵²⁸ Cf. also Petrie 1917, 39.

⁵²⁹ Cf. Gaitzsch/Matthäus 1981, 28.

⁵³⁰ For the reconstruction of a plane from Aquincum see: Szilágyi 1956, 65 and 67.

⁵³¹ From Pompeii: Naples, Museo Nazionale inv. 17964, cf. Boriello et al. 1988, 194-195, cat. 144; Cologne: cf. Gaitzsch/Matthäus 1981, 27 and 24 Abb. 8,2; Kastell Altstadt, cf. Gaitzsch/Matthäus 1981, 24 and Abb. 8; see also the originals printed in Liversidge 1976, 158 and 160 pl. 266-268 and Gaitzsch 1985, Taf. II, Abb. 8. Depiction: on a gravestone of a cart builder from Priolo in the Museo Nazionale at Syracuse, cf. Zimmer 1982, 142-143 Nr. 61.

⁵³² Now in the Museo Nazionale at Naples, inv. 8991.

⁵³³ Arnobius, Adversus Nationes 6.14: *runcinarum levigata de planis* (smoothed by the blades of planes); Plin., Nat. 16.225: *ad incitatos runcinae raptus* (with fierce strokes of the plane). The tool is also mentioned in: Arnobius, Adversus Nationes 5.28; Minucius Felix, Octavia 23.11; Tertullianus, Apologeticum 12.4; Var., L. 7.96; Vulgata, Isaias 44.13.

⁵³⁴ Synonyms: *scalprum*, *scalper*, *scalpellum*; verb: *scalpere*; cf. Petrie 1917, 19-22 and pl. XXI-XXIII; Gaitzsch 1980, 148-174.

⁵³⁵ Isid., Orig. 19.19.13; Liv. 27.49.1. Chisels are also mentioned by: Cels. 8.3 (in medicine); Orosius, Historiae 4.18.12; Sen., Ep. 65.13; Var., L. 6.96.

⁵³⁶ Aquileia, Archaeological Museum inv. 80697 and 19622 (gouge), cf. Bertacchi 1968, 42 fig. 14; Gaitzsch 1979, 203-207 and Taf. 23. Herculaneum: cf. Gore 1984, 572; Maggi 1985 tav. 51; the three examples are not separately catalogued. There are many other examples from Pompeii and Herculaneum in the Museo Nazionale in Naples: inv. 3335, 3346, 3513, 71859, 77683, 77757, 77984, 120743, 120856, 121228; cf. Boriello et al. 1988, 194-195 no. 140 (who give several examples). In the depot at Pompeii: inv. 2834, 2993, 6567.

were also used.

Serra - saw⁵³⁷

Several antique authors discuss the form of the saw. They describe the blade of metal teeth, moved by the hand, which saws its way through various materials.⁵³⁸ The toothed blade is compared with a fish bone,⁵³⁹ and with a specific herb.⁵⁴⁰ Pliny (Nat. 16.227) writes at length about the form, saying amongst other things that the teeth were bent alternately to left and right (as they are today) to allow the sawdust to escape.⁵⁴¹ The *lupus* (Palladius 1.42.2) was a special kind of saw, probably a fretsaw or compass saw.

Two main types of saw were in use during the Roman period, the frame-saw and the handled-saw. A painted depiction of a frame-saw is found on the facade of a workshop in Pompeii (VI 7, 8).⁵⁴² Both types are depicted on the altar dedicated to Minerva by the *Collegium fabrum tign(u)ariorum*, now in the Capitoline Museums in Rome.⁵⁴³ Gaitzsch (1980, 181-201) describes both types and subdivides them further into three types of frame-saw and two types of handled-saw.⁵⁴⁴ Besides the saws themselves, special tools to set the teeth have been found in Pompeii, Zugmantel (Germany) and elsewhere.⁵⁴⁵

Terebra - drill⁵⁴⁶

Columella draws a distinction between two types of drill: the old type which burned the edge of the hole and the dust (which remained in the hole) during drilling, and a new type, the so-called *terebra gallica*, which made no dust, instead drawing the shavings out of the hole.⁵⁴⁷ Here Columella is probably describing the difference between a spoon-bit and a twist-bit. He states a preference for the second type.⁵⁴⁸ Pliny mentions types of wood for drill handles.⁵⁴⁹ In

⁵³⁷ Latin words derived from the *serra* are: *serratim*, *serratus*, *serrula*, *serrabilis*, *serrago*, *serratorius*, *serratura*. The blade was called a *lam(m)ina* and the teeth *dentes*; for the history of the saw before the Roman period see: Gaitzsch 1984, 41-43; Roman saws: Gaitzsch 1980, 181-208; Gaitzsch 1984, 43-47.

⁵³⁸ Regarding the saw blade: Gloss. 5.306.28 *Lamina: fasciola cuiuslibet metalli, quomodo serrae*. (*Lamina*: a strip of any kind of metal, as in a saw); V. Fl. 1.123.

⁵³⁹ Hyg., Fab. 274.14; Ov., Met. 8.244-246.

⁵⁴⁰ Plin., Nat. 24.130.

⁵⁴¹ Both Isidorus (Orig. 19.19.9) and Vitruvius (6.8.7) also discuss the form. Vitruvius (2.7.1) uses the term *serra dentata* (toothed saw). Varro (ap. Non. 1.50.2) mentions iron as the material from which a saw blade was made. On the function of the saw: Verg., G. 1.143-145; Vitruvius 2.7.1; Vegetius, Epitome rei militaris 2.25; Cato, Agr. 14.3; Cic., Clu. 179-180; Sen., Ep. 90.9. On the sound made by sawing: Cic., Tusc. 5.116: *stridor serrae* (the scraping of a saw); Isid., Orig. 19.19.9; Lucr. 2.410-411. Ammianus Marcellinus (Res gestae 23.4.4) mentions a *serratoria machina*, possibly some kind of sawing machine.

⁵⁴² Now in the Museo Nazionale at Naples, inv. 8991; see § 4.6.1.

⁵⁴³ Capitoline Museums, inv. 2143. The relief was found in 1938 in the Vecchia Piazza Montanara, later part of the Via del Mare between the *Forum Holitorium* and the Theatre of Marcellus; cf. Colini 1947; Van Buren 1948, 502-503; Liversidge 1976, 158 and 160 pl. 265; Castagnoli 1979, 149 and nota 30; Zimmer 1982 Anm. 112 (but does not include the relief in his catalogue); Adam 1984, 96 fig. 205 and 100 fig. 215; Schürmann 1985, Taf. 5. Colini (1947, 22) reconstructs the relief as a part of an altar in honour of Minerva. Only Colini has published a photograph of the original. The other authors who include a picture give a photograph of a plaster cast in the Museo della Civiltà Romana.

⁵⁴⁴ See also Adam 1984, 98-101; for miniature saws see Behrens 1939, 56 no. 1.3; Manning 1966, 50-57 and 58 fig. 2 d and e, from a grave in Sussex.

⁵⁴⁵ The example from Pompeii: now in the Museo Nazionale at Naples, inv. 121234; Zugmantel: now in the Saalburg museum, Inv. ZM 4982, cf. Gaitzsch 1980, Taf. 60 Nr. 295.

⁵⁴⁶ Words derived from *terebra* are: *terebratio*, *terebratus*, *terebrare*, *terebramen*. Drills are thoroughly dealt with by Gaitzsch 1980, 19-37.

⁵⁴⁷ Col. 4.29.15-16.

⁵⁴⁸ Cf. Col. 5.9.16 and 5.11.12. We find the same preference in Plinius, Nat. 17.116. On the drill's function: Cato, Agr. 41.3; Col. 4.29.7; Isid., Orig. 19.19.14 (comparison between drill holes and woodworm); Lucr. 5.1267-1268; Ov., Fast. 6.697-698. The drill is also mentioned by: Cels. 8.3 (two types of drill were in medical use, one of which was also used in carpentry); Col., 4.29.13; Mart. 11.45.6; Plin., Nat. 7.198. Jacobi (1974, 39) mistakenly regards the twist-bit as a Roman innovation.

⁵⁴⁹ Plin., Nat. 16.230.

Vitruvius we read about the variable size of drill holes.⁵⁵⁰

Three types of drill were used in carpentry, the most important being those which turned the spoon-bit and the twist-bit.⁵⁵¹ They were operated differently: spoon-bits were turned with a bow and twist-bits by hand. Four original drills have been found in Aquileia. There are several surviving depictions.⁵⁵²

Tornus - lathe⁵⁵³

We do not know exactly what the Roman lathe looked like because no substantial descriptions or depictions have come down to us. We can get a rough idea, however, by combining two antique texts. Virgil talks about a sharp blade with which the desired form could be cut in wood and Paulus tells us that turning involves a circular piece of wood being spun round by a leather band.⁵⁵⁴ This element, called a *mamphur*, would seem to be part of the lathe mechanism.⁵⁵⁵ Pliny (Nat. 7.198) calls the lathe an invention of Theodoros of Samos, which should be regarded as a legend containing a grain of truth, perhaps that the tool was invented in Greece or Asia-Minor. It was probably first used in the 8th century B.C., and the oldest surviving turned objects certainly date from this time.⁵⁵⁶ An impression of how the antique mechanism might have worked can be gained from pictures of medieval lathes.⁵⁵⁷ These differ from the modern version in being unable to produce a continuous rotation. The motion goes to and fro, so that only half the rotation can be used for cutting. In the view of A. Rieth (1940, 633), Roman lathes were driven by a bow.⁵⁵⁸ Proposals for the reconstruction of such a lathe are given by H. Hodges (1976, 117-118) and by Th. Capelle and H. Drescher (1986, Abb.36).⁵⁵⁹ Fifteen chisels which were found in the workshop of the '*tornator Axius Gun(...)*' in Pompeii (VI 14, 39) may have been used for wood-turning.⁵⁶⁰ A lathe may be depicted on a relief dedicated to Minerva by the *fabri tign(u)arii*, now in the Capitoline Museums in Rome.⁵⁶¹ The invention and further development of the lathe can be regarded as one of the first steps towards mechanization.

Workbench

The workbench is of crucial importance for virtually all forms of woodworking. The Latin term for this piece of equipment is not known. Modern versions consist of a heavy, robust work top made of a hard and compact wood. To this are attached appliances which can clamp hold of the

⁵⁵⁰ Vitr. 10.16.5: *Terebratur terebra foramen semidigitale, digitale, sesquidigitale*. Half-thumb, thumb and thumb-and-a-half holes are drilled with the drill.).

⁵⁵¹ Cf. Gaitzsch 1980, 19-37.

⁵⁵² Originals at Aquileia, Archaeological Museum inv. 19298, s.n. and 19721: Gaitzsch 1980, No. 85-86 and 187-188; 185, 186 and 188? (two spoon-bits and two twist-bits). The depictions involve one in the Casa dei Vetti in Pompeii, already mentioned in relation to hammers, *triclinium* P, scene with Daedalus and Pasiphae: the drill lies with the bow on the ground under the workbench; a second depiction is on the gravestone of the cart builder Eutyches in the Museo Nazionale at Syracuse, cf. Gaitzsch 1980, 303 and Zimmer 1982, 142-143 Nr. 61. An original drill with bow is published by Petrie 1917, 38 nr. 103. Original drills are also given by Adam 1984, 103-104.

⁵⁵³ Verb: *tornare*.

⁵⁵⁴ Verg., G. 2.449-450; Paulus, Fest. 117 L: *Mamphur appellatur loro circumvolutum mediocris longitudinis lignum rotundum, quod circumagunt fabri in operibus tornandis*. (Mamphur is the name for a round piece of wood of modest length wound with a belt, which is spun by carpenters in turning.).

⁵⁵⁵ Capelle en Drescher 1986, 163, call it a '*Drehspindel*'.

⁵⁵⁶ Cf. Rieth 1940, 619. Theodoros could not have been the inventor because the lathe had already existed for some 200 years in his day. The lathe is also mentioned in Plin., Nat. 16.205 (in connection with the turning of *calices* in turpentine wood); Verg., Ecl. 3.35-39 (cups); Vitr. 9.1.2.

⁵⁵⁷ Rieth 1940, 629, gives examples from the 13th and 14th centuries.

⁵⁵⁸ This is supported by the depiction of a primitive lathe from Egypt (3rd century B.C.) in which one person creates the rotation while another cuts, cf. Capelle/Drescher 1986, 154.

⁵⁵⁹ Cf. also Sokol'skij 1971 fig. 58 and Kaplan 1985, 121.

⁵⁶⁰ Cf. Gaitzsch 1980, 315 Anm. 362.

⁵⁶¹ See above: *serra*

wooden elements requiring attention. Several depictions of Roman carpenters at work show that a top on two supports could serve as a workbench.⁵⁶² The top of an original bench has been found in the Saalburg in Germany. This is 2.58 m long and 10 cm thick. It is made from oak with four angled holes in the underside to hold legs. There is a fifth hole in the top. Into this would have fitted a piece of wood to which the element being worked on could be clamped. Two holes in the sides were similarly available for pieces to support, for example, a plank during sawing. The rough surface of the top confirms that the bench has been well used.⁵⁶³

The combination of our various sources seems to provide a fairly complete picture of Roman carpentry tools. Finds of original tools and contemporary depictions enable us to match the names given in the written sources with specific forms. There is strong evidence for a wide differentiation in carpentry tools, as well as a high degree of perfection. Moreover, it is clear from the finds that the tools used in the Roman period were not appreciably different from those of the modern craftsman.⁵⁶⁴ The furniture makers of Herculaneum undoubtedly had all the tools listed above at their disposal, as will be quite apparent from the discussion of cabinetmaking which follows.

4.6 Cabinetmaking

Cabinetmaking is the term generally used to describe most forms of fine carpentry, including the making of furniture: in other words, it is the work of producing a highly finished end product from rough timber. The Herculaneum furniture constitutes our most important source for Roman cabinetmaking techniques. From this invaluable starting point, and with additional material drawn from elsewhere, we look first at the main features of Roman woodwork joints and at the glue, dowels and nails used in conjunction with them. We then examine the various techniques involved in Roman cabinetmaking, such as turning, carving, inlay and veneer, and end with various types of finish and the mounting of fittings and appliqués.

4.6.1 Sources

There are three main sources of information on Roman cabinetmaking techniques:

1. depictions of cabinetmakers at work;
2. written sources;
3. the marks left by tools on surviving pieces of furniture.

There are few Roman depictions which specifically show furniture being made, but general scenes with woodworkers are more common and can give us some idea of the more specialized end of the spectrum. A gilt-glass from the 4th century A.D., now in the Biblioteca Apostolica Vaticana, is very important in this respect.⁵⁶⁵ Around the standing figure of Daedalus, the patron of the craft, six carpenters are pictured at work. Top right stands the Goddess Athena/Minerva. Other examples are a painting from the Casa dei Cervi in Herculaneum in which cupids are portrayed as

⁵⁶² Examples of this are: a wall painting, at the Museo Nazionale in Naples, inv. 9179, in which Cupids are pictured as carpenters (see § 4.6.1); Pompeii, Casa dei Vetti, *triclinium* P, north wall, scene with Daedalus and Pasiphae; a late-Roman gilt-glass in the Biblioteca Apostolica Vaticana: around Daedalus stand six carpenters, five of whom are working at a work bench on supports.

⁵⁶³ Cf. Jacobi 1934, 22 and Taf. III 12; other examples of workbenches have been found in Feddersen-Wierde, cf. Haarnagel 1979, 330 and Taf. 27, 5-7.

⁵⁶⁴ Cf. Jacobi 1897, 205; Gaitzsch 1980, 249.

⁵⁶⁵ The circular flat glass has a diameter of 16 cms. and was found in 1731 underneath the present Via Salaria; cf. Gummerus 1913, 89; Morey 1959, 23 No. 96 and pl. XVI; Richter 1966, 128 and fig. 613; Engemann 1973 Taf. 17c; Liversidge 1976, 158 pl. 264; Gaitzsch 1985, 182 and Abb. 17; Schürmann 1985, 58 and Anm. 794 (bibliography).

carpenters,⁵⁶⁶ and another from Pompeii in which a carpenter is seen making a hole in a plank with a mallet and chisel.⁵⁶⁷ Another painting from Pompeii features a procession in which four men are carrying a miniature workshop on a litter. Two carpenters are sawing through a plank. A third figure (probably Daedalus) is supervising, while a fourth (probably his unfortunate nephew Perdix) is lying on the ground. Athena/Minerva and her shield are partially visible far left.⁵⁶⁸

Between them H. Gummerus (1913, 85-93), M. Reddé (1978, 44-45) and G. Zimmer (1982, 139-152 and 1985) have assembled most of the depictions which relate to Roman woodworkers. While the first concentrated entirely on examples from the Apennine peninsula, the second deals with the Gaulish material, and the last includes material from elsewhere.

Three reliefs actually depict furniture workshops. They all portray the making of a three-legged table, the *mensa delphica* type familiar in Herculaneum. One of them, a relief on a sarcophagus in the Vatican's Museo Gregoriano Profano, shows two craftsmen (see fig. 25). One of them is modelling a table leg with an adze, while the other is planing a plank.⁵⁶⁹ Unfortunately the second relief, which is in the Capitoline Museums in Rome, has survived only in fragments. It is part of a monument erected in honour of Minerva by the *fabri tign(u)arii*. On the far left stands Minerva with a frame saw behind her. To her right is an implement which should perhaps be interpreted as a lathe. Beyond this we see seven craftsmen at work and a collection of loose tools. One of the men is engaged in finishing a table. The missing parts of the relief prevent us from interpreting what the other men are doing.⁵⁷⁰ The third relief comes from Ostia and is in the town's Antiquarium. Here two craftsmen are finishing a table.⁵⁷¹

The inscription on a grave-relief in the Louvre (inv. 934) tells us that the stone was made for the bed-maker P. Beitenos Hermes. The deceased is not shown at work, but rather surrounded by the tools of his trade, which include an adze-plane, a square and a set of compasses.⁵⁷² Another indication that a furniture maker is definitely involved appears in the bottom right hand corner, where we see the curved board of a bed in profile. This detail was not correctly identified in the past.

The written sources on Roman cabinetmaking are not numerous. Most of them concern woods and tools and have already been dealt with. The Herculaneum furniture is thus especially important in providing information which is not to be gleaned from depictions and still less from the written sources. The fineness of the details they contain make it immediately apparent that great skill and surprisingly advanced tools were required for their manufacture. We are also able to examine the marks left by these tools on real pieces of furniture.

4.6.2 Woodwork joints

A woodwork joint fixes two wooden elements together. Very broadly, woodwork joints can be divided into angle joints and scarf joints. The first joins two pieces at an angle, usually of 90°; the second joins two similar pieces to produce a longer piece with the same overall breadth and

⁵⁶⁶ The painting is now in Naples, Museo Nazionale, inv. 9179, cf. Overbeck/Mau 1884, 582 Abb. 305 and 583; Tanzer 1939, 61 fig. 33; Richter 1966, 128; Boriello et al. 1988, 154-155, cat. 229 d; Tran Tam Tinh 1988, 63 no. 17 and fig. 102 and note 34 (bibliography); Ajello et al. 1988, 157 no. 58.

⁵⁶⁷ Pompeii, Casa dei Vetti, *triclinium* P, north wall, in the scene with Daedalus and Pasiphae.

⁵⁶⁸ The painting comes from the facade of house VI 7, 8-11 at Pompeii, and is now in Naples, Museo Nazionale inv. 8991; cf. Quaranta 1851, 169-191 (the myth itself is also closely examined here); Richter 1966, 128; Adam 1984, 99 fig. 214; Schürmann 1985, 56-61; Boriello et al. 1988, 168-169, cat. 327; Moormann 1988, 170, cat. 198e; Fröhlich 1991, 62, 167 and 319-320 (Kat. F 38) and Taf. 57.1 (with bibliography). The painting is not included in the LIMC (s.v. Daedalus).

⁵⁶⁹ Museo Gregoriano Profano, inv. 3262; cf. Richter 1966, 127 and fig. 614; Zimmer 1982, 139-140 Kat. 57 with bibliography; Amedick 1991, 115 and 167 Kat. 283 and Taf. 112.2 (with bibliography).

⁵⁷⁰ See note 543.

⁵⁷¹ Ostia, Antiquarium inv. 138, cf. Reddé 1978, 44-45; Zimmer 1982, 140-141, Nr. 58.

⁵⁷² Cf. Richter 1966, 127 and fig. 612; Burford 1972, 12 pl. 8; Liversidge 1976, 163 fig. 271 and Gaitzsch 1980, 300 Taf. 62.

thickness.⁵⁷³ Both types are found in Herculaneum, but only angle joints occur in the furniture. We encounter scarfs in the architecture, where there was often a need for very long members which could not be obtained from a single length of timber.⁵⁷⁴ The absence of scarfs in the Herculaneum furniture suggests that there was ample wood available in the town. This strengthens the assumption that there were abundant forests on the slopes of Vesuvius or on the surrounding mountains. (see § 4.4.3). We find a much more economical use of timber in other places, where local scarcity prompts carpenters to join shorter lengths together with scarfs.⁵⁷⁵

The most common angle joints found in Herculaneum are represented in figure 22.⁵⁷⁶ Their form generally reflects their function. The most widespread is the mortise-and-tenon (see fig. 22 A-B) and both open and blind (or stub) versions are found (both still widely used today). In the open version the tenon goes right through the holed element and its end is visible on the other side (fig 22 B), while in the blind version it is concealed within the hole. The first type can be seen in the amphora rack in the shop attached to the Casa di Nettuno ed Anfitrite (cat.no. 31; figs. 148-149). Another example is found in one of the benches, where the bottoms of the legs have tenons which fit into mortises in the stretchers (cat.no. 26; figs 134, 136). Blind mortise-and-tenon joints occur more often, for example at the corners of bed and cupboard frames.⁵⁷⁷ The tenons were cut with a saw, while the mortises were first drilled and then finished off with a flat chisel and mallet.⁵⁷⁸ The interlocking parts were usually rectangular or square.

Half-lap joints are found, for example, in beds where the slats of the mattress support intersect (Grid A, in cat.nos. 1 and 2; figs. 22 C, 33, 35, 37, 38, 41).⁵⁷⁹ The supports of one bench (cat.no. 25) are attached under the seat with stepped half dovetail tongue and groove joints (fig. 132 G). Extra strength may have been provided by rails or a panel running between the two supports.⁵⁸⁰ The four sides of the chest (cat.no. 44) have lock corners (or comb joints) (fig 22 D, 168). When large boards were needed, as in the child's bed from the Casa a Graticcio (cat.no. 3) and the amphora racks (cat.nos. 31, 32 and 33), planks were glued edge to edge (nowadays known as edge-, straight- or plain-jointing). In the child's bed seven planks are glued together with the end grain running in alternate directions. These joints may have been strengthened by hidden (loose) dowels or other inserted pieces, but this is unlikely. In a variant of this joint the glued planks are braced along the ends by a grooved batten which takes tongues cut in the ends of the planks (fig. 22 F). This especially strong technique is used in the boards of the couch in the *Insula Orientalis* II 9 (cat.no. 12; figs. 82, 85-86).

In a number of beds and couches we find a rebate to take boards along two or three sides of the top of the bedframe. A moulding was fitted into the rebate in front of each board to brace the construction.⁵⁸¹

In two tables (cat.nos. 15 and 18) the three legs are connected two thirds of the way up by

⁵⁷³ Weeks (1982, 165) gives a good definition: 'In carpentry, a *joint* is specifically the means of joining together two separate lengths of timber at an angle, usually 90°', while 'a *scarf* is used to create an apparently continuous length of timber from two shorter lengths.'

⁵⁷⁴ Examples of scarf joints in architecture: from the Saalburg: Jacobi 1897, Abb. 30; see also Adam 1984, 104 fig. 230 and 105 figs. 231-233. For scarf joints, see also Weeks 1982, 166.

⁵⁷⁵ Watzinger (1905, 44 Abb. 79) shows scarf joints in coffins from the Hellenistic period.

⁵⁷⁶ Cf. Mols 1993, 492-493 and 498 tav. CX III, 2.

⁵⁷⁷ See figs. 33, 35, 38, 46-47, 67, 69.

⁵⁷⁸ The finishing of a hole with a chisel and mallet can be seen in the scene with Daedalus and Pasiphae in *triclinium* P of the Casa dei Vetti (north wall) at Pompeii. Under the bench at which the carpenter is working lies the drill which he has used to pre-drill the hole. For Roman mortise-and-tenon joints, see Weeks 1982, 163-164.

⁵⁷⁹ For Roman half-lap joints, see also Weeks 1982, 159-161.

⁵⁸⁰ Apart from Herculaneum, dovetail joints are found in a small chest from England, cf. Musty/Manning 1977, 330-331 and fig. 4; in caskets from the Crimea, cf. Vulina/Wasowicz 1974, 137-139 (cat. 59 and pl. CXIX fig. 80, cat. 60 and pl. CXX fig. 81, cat. 61 pl. CXXI fig. 82 now in the Hermitage in St. Petersburg, inv. respectively E 249, E 767, P 1890.1); Pinelli/Wasowicz 1986, 175 no. 89 (now in the Louvre, inv. S 4027). For Roman dovetail joints, see also Weeks 1982, 163.

⁵⁸¹ For example in cat.nos. 2, 7, 9 and 10; see also fig. 83.

stretchers attached to the back of each leg with wooden pins (probably) or with mortise-and-tenon joints (possibly). These rungs meet in the centre (at 3 x 120°) (figs. 97 C-G, 99, 111, 114 C-F) where a round hole was made to take a vertical pin. The joint was secured with a moulded boss at the top, probably with another underneath. Echoes of this construction are sometimes found in marble tables, which suggests that they are derived from earlier wooden versions (see § 3.3).

A number of cupboards have doors and sides constructed from framing and loose panels (unglued tongue and groove, fig. 145 I-O). The same principle is to be found in large doors, such as those in the Terme Suburbane (figs. 23-24; see also § 3.6).⁵⁸² This method served to prevent warping in the doors, which was more likely with a single board.⁵⁸³ In Latin these door panels are referred to as *tympana* and the framing consists of *impages* (rails) and *scapi* (stiles). Explanations of the subject can be found in Vitruvius and Paulus. The former also records the relative dimensions proper to the various components of a door, to which all the doors in Herculaneum, including the miniature versions in *aediculae*, essentially conform.⁵⁸⁴ Panels are also used in bed and couch boards (cat.no. 9; fig. 65).⁵⁸⁵ The panels themselves are assembled from planks glued together lengthwise. They were set off by a moulded edge to the framing which was mitred into the corners. The wide variety of mouldings found in the Herculaneum furniture make it quite apparent that local craftsmen must have had a full range of moulding planes at their disposal. Besides the doors of *aediculae* and cupboards, there are mouldings found in beds and couches (where they strengthen the angle between the bedframe and the boards), in the rims of tabletops and in the seat of a stool. Details of these mouldings are included in the drawings of the individual pieces at the end of the book.⁵⁸⁶ Panels surrounded by mouldings remain in continuous use throughout the Roman period and beyond. We find them, for example, in late-Roman and early-Christian depictions of *sigmata* (crescent-shaped couches) such as the one featured in the portrayal of the Last Supper in S. Apollinare Nuovo in Ravenna.⁵⁸⁷

⁵⁸² For these doors see Maiuri 1958, 159 and 164. The glued tongue and groove joint occurs in Herculaneum in one specific type of wooden staircase, cf. Mielke 1977, 41 Typus 1 and 43-45 Abb. 6-8: examples of this are the staircases in the Casa a Graticcio (III 13-15), *Insula* V 10, the Casa del Bicentenario (V 15) and in the *Insula Orientalis* II 9.

⁵⁸³ For the difference between Roman and modern methods see Koeppen/Breuer 1904, 179 and 177 Abb. 248. For Hellenistic methods, see Watzinger 1905, 82.

⁵⁸⁴ Vitr. 4.6.4-4.6.5: *Fores ita compingantur, uti scapi cardinales sint ex latitudine luminis totius XII parte. Inter duos scapos tympana ex XII partibus habeant ternas partes. (5) Impagibus distributiones ita fient, uti divisis altitudinibus in partes V duae superiori, tres inferiori designentur. Super medium medii impages conlocentur, ex reliquis alii in summo, alii in imo compingantur. Altitudo impagis fiat tympani tertia parte, cymatium sexta parte impagis. Scaporum latitudines impagis dimidia parte; item replum de impage dimidia et sexta parte. Scapi qui sunt secundum antepagamentum, dimidium impagis constituentur. Sin autem valvae erunt, altitudines ita manebunt, in latitudinem adiciatur amplius foris latitudo.* (The doors must be so made that the stile which carries the hinges takes up one twelfth of the full breadth of the door opening. Between the two stiles the panels should each take up three further twelfths. (5) The rails should be placed so that, after dividing the height into five parts, with two ascribed to the upper section and three to the lower section, the middle rails should be placed above the dividing line. Of the others one rail must be right at the top and the other right at the bottom. The depth of the rails must amount to one third of the width of a panel, the depth of the moulding one sixth of that of the rails. The width of the stiles must total half the depth of the rails; the architrave two thirds of a rail. The width of the stiles which stand beside the door posts should be set at half the depth of the rails. When the doors are double folding doors the vertical proportions should remain the same, but horizontally the breadth of one door should be added.); Paul., Fest. 95 L.: *Impages dicuntur, quae a fabris in tabulis figuntur, quo firmitus cohaereant, a pangendo, id est figere. Unde et poetae pangere versus dicuntur et agricolae pangere plantas.* (The elements which are fixed to planks by carpenters are called *impages*, by which they are fastened more tightly, from *pangere*, i.e. 'to fasten tightly'. Thus it is said of poets that they write 'tightly' and of farmers that they 'tight down' young plants.). Regarding doors, see also Righini 1965, passim and Tybout 1989, 260-273 with accompanying notes (bibliography) esp. 263-273 ('Die gebauten Vorbilder'). The doors on wall paintings are much more luxurious than any which have been found. These painted doors are presumably borrowed from palace and temple architecture and can be seen as formal doors. Tybout (1989, 266) calls them a 'Luxustopos'. An original Roman door with panels from the Fayum (Batn-Harit) is given by Rubensohn 1905, 4-5 and Abb. 4.

⁵⁸⁵ Other examples are casts of the boards of beds in Pompeii, cf. Overbeck/Mau 1884, 424 Abb. 225 (now lost) and casts from beds in the Casa del Sacello Iliaco (I 6, 4) and the Casa di Cerere (I 9, 13) (see appendix 3).

⁵⁸⁶ We also come across panels and mouldings in coffins from Egypt (Roman period), excavated by the Metropolitan Museum in New York at el-Bagawat (Chargeh-Oase), cf. Parlasca 1991, 125 and Abb. 12-13.

⁵⁸⁷ Cf. Engemann 1982, 239 and Taf. 14a. For panels see also Ehlich 1953, 146-151.

Angle joints could always be strengthened with dowels. This technique is very often employed in the Hellenistic coffins from Kertch.⁵⁸⁸ In Herculaneum we find dowels strengthening the joints between the rails and the stiles in the framing of one of the doors in the Terme Suburbane, (figs. 23-24). In the Herculaneum boat there are mortise-and-tenon joints strengthened with dowels which are inserted across the joint.⁵⁸⁹ We do not know whether dowels are used in the furniture. The only piece which looks a possibility is the *biclinium* in the Casa dell'Alcova (cat.no. 6; fig. 54, in the element marked 4; fig. 55), but the poor state of this piece does not allow final judgements about details.

It is apparent from two paintings found in Pompeii that nails were sometimes used in making furniture or comparable objects. One of these depicts a *largitio* (a distribution of gifts, in this case food), which in the past was interpreted as a bakers shop. In the centre of the scene stands a dais built of planks which are nailed to a hidden frame.⁵⁹⁰ The second is the audience scene on the tomb of Vestorius Priscus, previously regarded as a judicial scene. Here a man sits on a *sella curulis* which stands on a platform constructed in a similar way.⁵⁹¹ No nails have been found in the Herculaneum furniture, but the various elements of a wooden panel, found in the wall on the upper storey of the Casa del Bicentario, are nailed together. The panel served as the backing for a scene which was inserted separately into the wall painting.⁵⁹²

Wood could also be steamed to make curved elements, thereby avoiding the need for complicated joints. It is clear from the *Historia Plantarum* of Theophrastos (5.6.2 and 5.7.3-4) that this technique was already known in the Hellenistic period. The supports of the Herculaneum cradle (cat.no. 11; figs. 78-80) were possibly bent in this way, but they may also have been made from wood which was naturally curved. Again, the poor state of the piece prevents a definitive judgement.

The written sources rarely refer to woodwork joints. Servius and Isidorus of Seville discuss them in general (*commissurae*).⁵⁹³ Probable synonyms are *compages* and *compago*.⁵⁹⁴ Isidorus also mentions *epigri* (dowels) and *clavi* (nails).⁵⁹⁵ A dovetail joint is indicated by the term *subscus*.⁵⁹⁶

4.6.3 Gluing

The nature of the woodwork joints in Herculaneum makes it quite clear that glue was used as an

⁵⁸⁸ Watzinger 1905, passim.

⁵⁸⁹ See Steffy 1985, 520 and the present Introduction, note 3. We find dowels used a great deal in ship-building, for example in the jointing of planks, where hidden pegs were additionally strengthened with dowels; Cuomo and Gassend (1982, 263-265, esp. fig. 2 a,b,c) have observed the same technique used in the ship from La Bourse, Marseille.

⁵⁹⁰ The painting comes from the so-called 'Bottega del fornaio' (VIII 3, 30) and is now to be found in the Museo Nazionale at Naples, inv. 9071, cf. Felletti Maj 1977, tav. LXV (158) and Boriello et al. 1988, 168-169, cat. 329. For the new interpretation, see Fröhlich 1991, 236-241 and Taf. 23.1.

⁵⁹¹ For this scene, see Spano 1943, 271-272; Mols/Moormann 1996, 29-30 and 43-44.

⁵⁹² See Maiuri 1958, 484 and fig. 3. Nails are also used in various wooden staircases in Herculaneum, where the treads consist of solid timbers with a triangular section. The staircase in the Casa della Stoffa (IV 19-20) can serve as an example.

⁵⁹³ Serv., A. 9.672: *Commissa, id est clausa; inde commissurae dicuntur coniunctiones tabularum. Commissura enim dicitur tabularum coniunctio, sicut Cicero in Fundaniana meminit. (Commissa, that is to say closed; thus joints between boards are called commissurae. Commissura is after all the name of a boarding joint, as Cicero mentions in his speech in defence of Fundanius.);* Isid., Orig. 19.19.8: *Commissura dicitur tabularum coniunctio. (A boarding joint is called commissura.)*

⁵⁹⁴ Liv. 35.26.8; Lucr. 6.1071; Mart. 9.47.4-5; Suet., Aug. 43.12; Augustinus, contra Faustum 12.14; Ambrosius, de Noe 6.15.

⁵⁹⁵ Isid., Orig. 19.19.7: *Epigri et clavi sunt quibus lignum ligno adhaeret (Dowels and nails are the things which fix wood to wood.);* for *clavus*, see: Hor., Carm. 1.35.17-20; Plin., Nat. 7.198; Petr. 75; *epi(g)rus*: Augustinus, de Civitate Dei 15.27.

⁵⁹⁶ Paul., Fest. 398-400 L.: *<Subscudes ap>pellantur cune<a>tae tab<ellae, quibus> tabulae inter se con<figuntur, qui>a, quo eae immituntur, <succuditur. Pa>cuvius in Niptris (250): "Nec ulla subscus cohibet compagem alvei", Plautus in Astraba (13): "Terebratus multum sit, et subscudes addite. (The small wedge-shaped pieces of wood with which planks are joined together are called subscudes because the sections into which they are fitted correspond (succuditur). Pacuvius uses the term in the Niptra: "not a single subscus holds a seam of the boat together", Plautus in his Astraba: "Have it sufficiently bored and add the subscudes".);* see also Arnobius, Adversus Nationes 6.16; Augustinus, de Civitate Dei 15.27; Cato, Agr. 18.9. mentions loose fitting dovetail joints in oak (*illex*). A synonym for *subscus* was probably *securic(u)la*: see Vit. 4.7.4 and 10.10.3.

adhesive, even though no traces of it remain. This assumption is strengthened by the fact that virtually no other strengtheners (dowels, nails, cords, straps etc.) have been found. The extensive information available on the use of glue by woodworkers, especially in Pliny, also suggests that the technique was widespread.⁵⁹⁷ The written sources also discuss different types of glue. Pliny distinguishes between cow glue (*gluten taurinum*) and fish glue (*ichthyocolla*). The first was probably obtained from cattle bones and the second from fish skin.⁵⁹⁸ There is no reference to casein glue during the Roman period and we should probably regard it as an early medieval discovery.⁵⁹⁹ Bitumen and pitch were used for caulking, and possibly also as glue. They crop up primarily in texts relating to shipbuilding, but their use in the finer forms of carpentry cannot be ruled out.⁶⁰⁰ Richter (1966, 125) believes that metal appliques were glued to wood, but this is unlikely; nails alone were used for this task (see § 4.7.1).

4.6.4 Turning

Many of the beds in Herculaneum had round legs which were produced on the lathe. The legs of the bed in the Collegio degli Augustali (cat.no. 10; fig. 67 B and G; fig. 68) are the only ones which still occupy their original position but, according to the excavation reports, the *biclinium* in the Casa dell'Alcova and the couch in the Casa del Mobilio Carbonizzato (cat.nos. 6 and 7 respectively) both had legs of the same type. The shaped sections were first separately turned, then a hole was bored through them and they were threaded like beads on to an iron rod. It was this rod which provided the real support for the bed and the wood was thus purely decorative. The bases and shafts of the columns in *aediculae* may also have been produced on the lathe (figs. 138, 142, 145-147), with the capitals placed on top of them afterwards. The turning of metal for bed legs is discussed in section 4.7.1. Beyond Herculaneum, an example of turning can be seen in the leg of a stool from Rifeh in Egypt.⁶⁰¹

4.6.5 Carving and inlay

The capitals of the columns in *aediculae* were modelled using chisels, gouges and probably knives. However, the most striking examples of wood carving in Herculaneum are the table legs. These have survived in large numbers and exhibit a wide range of carved or whittled decorations, including the heads of griffins and the bodies of dogs, often very realistically modelled (figs. 95, 106, 108, 111, 114-116). A less complicated form of carving is the incision of architectural details in the *aediculae*. Usually these are line decorations suggesting a tooth moulding on the pediment (fig. 137). Similarly simple is the volute worked into one of the bench supports (cat.no. 25; figs. 131-132). Finally, the excavation reports give several more examples of carving. The decoration described on the boards of one particular bed can be identified as a carved egg-and-dart moulding.⁶⁰²

Nowhere, either in Herculaneum or elsewhere, have traces of wood inlaid in wood been found;

⁵⁹⁷ Plin., Nat. 13.82; id. 16.215; id. 16.225; id. 16.226; id. 28.182; id. 35.36; see also: Cels. 8.5.1; Char. 1, 167B, 19-29; Plinius Secundus (Gargilius Martialis), Medicina 3.30; Virg., G. 4.159-161.

⁵⁹⁸ *Gluten taurinum*: Cels. 5.5; Cl. Hermerus, Mulomedicina Chironis 674 and 851; Lucr. 6.1069-1071; Marcellus, de Medicamentis 27.82; Plin., Nat. 1.128; id. 11.231; id. 28.236; Plinius Secundus (Gargilius Martialis), Medicina 2.11; id. 3.9; Larg. 254. *Ichthyocolla*: Plin., Nat. 7.198; id. 32.73; Cels. 5.2; Gloss. 3.195.36. The *gluten bituminis* which Pliny (Nat. 35.180) and Augustine (de Civitate Dei 15.27 and contra Faustum 12.14) mention was probably used in building and in the cruder forms of carpentry (e.g. ship-building).

⁵⁹⁹ The earliest description of the preparation of casein glue stems from the 12th century A.D. and is given by Theophilus (de Diversis artibus XVII), cf. Dodwell 1961, 16-17; Theobald/Von Stromer 1984, 388.

⁶⁰⁰ Plin., Nat. 16.52 and 35.180; Augustinus, de Civitate Dei 3.31, 15.27 and 15.33; id., Contra Faustum 12.14; Ambrosius, de Noe 6.15; Vulgata, Exodus 2.3.

⁶⁰¹ Cf. Richter 1966, 103 note 5 and fig. 514. The piece is now in the Metropolitan Museum in New York, acc. 08.205.13b.

⁶⁰² See appendix 1: 17 February 1871. Examples of furniture with carving in Pompeii are the racks in the *Schola Armaturarum* (III 3, 6). The supports have carved capitals which have been gilded, cf. NSc 1916, 429-430 and fig. 6.

however, there are various examples of metal inlaid in metal and of other materials (ivory, glass paste, silver) inlaid in wood; these will be discussed later (§ 4.7.2 and 4.7.3).⁶⁰³

4.6.6 Veneer and 'wood mosaic'

In at least three of the Herculaneum pieces the wooden base is wholly or partly covered by a thin veneer of another wood. The veneer is about 1.5-2 mm thick and always has a dramatic grain. Just like today, this served to give the impression that the whole piece was made of a more expensive wood. It is clear from Ovid that the use of veneer (*lamna*, *brattea* or *bractea*) was generally known, because the poet refers to it in passing.⁶⁰⁴ Pliny lists the woods best suited for veneer; according to him, the most attractive came from burrs on the roots.⁶⁰⁵

The three veneered pieces from Herculaneum are a couch, a stool and an *aedicula* (cat.nos. 13, 23 and 29; figs. 87-93, 125-126, 141, 143-145). In the first two the veneer is laid upon a base of silver fir. According to Maiuri (1958, 260) there was veneer found on another couch - the one in the Casa del Mobilio Carbonizzato (cat.no. 7) - but neither the excavation report of March 1933, nor the present remains confirm this assumption. In the 18th century excavation reports, K. Weber records the finding of a chest embellished with gilded wooden veneer.⁶⁰⁶

We see veneer in the modern sense of the word only in parts of the couch referred to above (cat.no. 13; fig. 90), where the bedframe is covered with a continuous sheet of veneer. The rest of the piece and the two other items are decorated with a simple form of marquetry, using only one type of wood which we will call 'wood mosaic'. Finely cut pieces of veneer are laid in a mosaic of geometric forms, which are brought out by careful juxtaposition of the grain. Thus we have a decoration of meanders, triangles and other geometric motifs on the couch, an eight pointed star on the stool and bands with a combination of meanders and triangles on the *aedicula*. The sheets of veneer were probably sawn or cut by hand, and then glued to the wooden base. This had probably been roughened to provide a better bond, perhaps with a rasp or a plane with a toothed blade. This certainly holds for the stool (cat.no. 23), which shows traces of being roughened with a rasp in places where the veneer has disappeared.

The veneers are too thin to provide samples for analysis, but we can assume that the woods used would have been relatively expensive. Pliny (Nat. 16.232) describes the practice of veneering as a special luxury. From this we can conclude that the three veneered pieces which have survived in Herculaneum were once valuable articles.

4.6.7 Wickerwork

Although there are no examples of wickerwork furniture in Herculaneum, the technique deserves a brief mention. Various reliefs dating from the 1st century A.D., in particular from the northern provinces of the Roman Empire, depict chairs whose sides and backs are of wickerwork on a wooden frame.⁶⁰⁷ Besides these reliefs we also have several three-dimensional imitations in

⁶⁰³ Verg., A. 10.135 mentions wood inlaid in wood in connection to a sculpture.

⁶⁰⁴ Ov., Ars 3.231-232: *Aurea quae pendent ornato signa theatro/ inspice, contemnes brattea ligna tegit*. (Look at the golden statues which hang in the decorated theatre, you will not be impressed. It is only a layer on wood.)

⁶⁰⁵ Plin., Nat. 16.231: *Quae in lamnas secantur quorumque operimento vestiatur alia materies, praecipua sunt citrum, terebinthus, aceris genera, buxum, palma, aquifolium, ilex, sabuci radix, opulus. Dat et alnus, ut dictum est, tuber sectile, sicut citrum acerque. Nec aliarum tuber iam in pretio. Media pars alborum crispior et, quo propior radici, minoribus magisque flexilibus maculis*. (The types of wood which can be cut into sheets and used as a coating to cover other woods are primarily *Citrus*, turpentine, various maples, box, palm, holly, holm oak, elder root, and *opulus* [possibly *acer opalus*]. Alder, it is said, also produces a burr which can be cut, like *Citrus* and maple. The burrs on other trees are no longer worth anything. The heartwood of trees is harder and the closer it is to the roots, the finer and more twisted the grain.) Other references to veneer are: Plin., Nat. 13.94; id. 16.66; id. 16.68; id. 16.226; id. 16.229; id. 16.232; id. 33.146; Strabo 12.13.2.

⁶⁰⁶ See appendix 1: 13 and 20-10-1759.

⁶⁰⁷ Examples are given by Richter 1966, 101 and fig. 505 (relief in Dresden), 506 (relief with a toilet scene from Neumagen, now in Trier), 508 en 554 (sarcophagus from Simpelveld, now in the Rijksmuseum van Oudheden at Leiden; see fig. 10 of the present book). Cf. also Richter 1926, 124 and figs. 295-296.

stone.⁶⁰⁸ At the end of the 1st century A.D. such chairs represent a widespread type, which is generally assumed to derive from Etruscan antecedents.⁶⁰⁹ The many depictions found in the northern provinces are possibly due to the widespread availability of willow and the resulting presence of specialized wickerworkers.⁶¹⁰ Pliny mentions the rods of certain types of willow present in Italy as being very suitable for the making of chairs, from which it is apparent that wickerwork seating was being made on the Apennine peninsula during the 1st century A.D..⁶¹¹ Basket furniture was popular throughout the Mediterranean region in antiquity. There are even signs of it being produced in the Greek region during the 3rd millennium B.C..⁶¹² Many examples of wooden chairs with woven seats have been found in Egypt, but none are known from the Roman period.⁶¹³

4.6.8 Finishes

The cabinetmaker used planes and rasps for finishing off the wood, and files for the finer work. We also read in Pliny that fish skin was used as a sort of 'sand-paper'.⁶¹⁴ Although the surfaces of the Herculaneum furniture are carbonized, the marks of a rasp are sometimes recognisable, for example in the amphora rack in the *Insula VI 12* (cat.no. 32). In most cases the finish is so smooth that it must have been achieved with fish-skin or files. It is also quite conceivable that other materials were used for polishing wood. Pumice-stone or wool are two possibilities, both of which were available in the Vesuvius area. Neither are mentioned by antique authors in this regard, however.

After polishing the furniture could either be painted or given a layer of oil or wax. Both Vitruvius and Pliny are advocates of oil as a protection against insect damage and rot.⁶¹⁵ They mention cedar oil, rose oil and oil obtained from juniper berries. Apart from its protective effects, oil (and wax) produce a shiny surface which enhances the decorative effect of the wood.⁶¹⁶ Modern preservation techniques prevent us from establishing whether the Herculaneum furniture was treated with oil in antiquity. The use of wax is not mentioned in the literature in regard to wooden furniture, nor can it be detected in Herculaneum.⁶¹⁷

At present we have no painted furniture to study. However, excavation reports from Boscoreale, Herculaneum and Pompeii suggest that furniture could have been extensively painted.

⁶⁰⁸ Two examples from a grave in Weiden near Cologne; cf. Fremersdorf 1957, 28; Richter 1966, 507; Deckers/Noelcke 1980, 159-160 and 163 Abb. 4; two others in private possession in Scotland, cf. Seltman 1947, 22-24. See also Liversidge 1955, 16-18, 25-26 and figs. 25, 26, 29, 30.

⁶⁰⁹ Cf. Richter 1966, 101; Steingräber 1979, 23-25 and 149-151: 'Throntyp I a/b'.

⁶¹⁰ For more on wickerwork chairs see Daszewsky 1966, *passim*.

⁶¹¹ Plin., Nat. 16.174: *Salicis etiam plura genera: ... aliae praetenuis viminibus texendis spectabili subtilitate, rursus aliae firmiores corbibus ac plurimae agricolarum suppellectili, candidiores ablato cortice lenique tractatu maioribus vasis, quam ut e corio fiant eadem, atque etiam supinarum in delicias cathedrarum aptissimae*. (The willow has even more varieties: ... other types are very thin, with the extreme fineness needed for wickerwork, while yet others are thicker and good for baskets and a host of farming tools; these are whiter after the removal of the bark and after a light treatment can be used to make larger vessels than can be made from leather, and are also especially good for easy chairs with high backrests.).

⁶¹² Cf. Jahn 1990, 81 and 153.

⁶¹³ Examples of chairs and stools with wickerwork seats from the eighteenth dynasty in Egypt are given by Baker (1966, 64 fig. 68, 114-116 and fig. 154) and Killen (1980, 62-64).

⁶¹⁴ Plin., Nat. 9.40: *Squamis ut pisces, aspera cute ut squatina, qua lignum et ebora poliuntur*. (With scales like fish, with a rough skin like the *squatina* (unidentified species of fish) with which wood and ivory objects are polished.); Plin., Nat. 32.108: *Haec est qua diximus lignum poliri, quoniam et a mari fabriles usus exeunt*. (This is what we call polishing wood, since things useful for carpentry also come from the sea.)

⁶¹⁵ Vit. 2.9.13; Plin., Nat. 16.197-198 and 21.15. See also: Cato, Agr. 98.1 (chest); Hor., Ars 330-332 (and the comment of Porphyrius!); Plin., Nat. 16.52; Serv., A. 7.178.

⁶¹⁶ Cf. Cato, Agr. 98.2: *Et item ligneam suppellectilem si ungues, non putescet, et cum ea terseris, splendidior fiet*. (And likewise when you rub (oil) all over your wooden articles they do not rot, and with this treatment become more shiny.)

⁶¹⁷ Vitruvius (2.9.13), mentions a wax obtained from the cypress tree which may have been used to rub into wood.

The reports of painted examples in Herculaneum always mention the colour red.⁶¹⁸ We know of a red painted bed and storage furniture from Pompeii.⁶¹⁹ Traces of red paint on the table leg from Bergkamen-Oberaden provide evidence that this colour was also applied to furniture beyond the Vesuvius area.⁶²⁰ In an excavation report of 16th May 1933 we read that a bed found in Herculaneum had red geometric patterns on it. This would suggest that furniture was not always painted in a single colour but could be quite busily decorated, in marked contrast to modern furniture. There is at least one piece of evidence to support the hypothesis that colours other than red were used. In his publication of the Villa di contrada Pisanella in Boscoreale, A. Pasqui describes a bed which was painted in bands of different colour over a red background.⁶²¹ In the written sources the painting of furniture is discussed only once.⁶²² The painting of a number of marble *mensae delphicae*, a few of them monochrome but mostly polychrome, can be taken to imply that wooden versions of such tables were also painted in more than one colour.⁶²³ According to Moss (1988, 95) the colours on the marble pieces are inspired by the polychromy on large sculptures, although fewer colours are used and the treatment is simpler. The example from Bergkamen-Oberaden indicates that the painting of furniture was not an isolated Campanian phenomenon.⁶²⁴

There are some traces of gilding on wooden artefacts from Herculaneum, such as the framed panels above the sliding door in the right-hand *ala* of the Casa del Bicentenario. The 18th century excavation reports mention a chest with a gilded veneer.⁶²⁵

The technique of painting on a plaster base, which was often used on Egyptian furniture, is found in Herculaneum only on the *aedicula* in the Casa a Graticcio (cat.no. 27). In this piece, part of the plaster on the inside and top edge of the *cella* is painted with red paint.

4.7 The use of materials other than wood

There have been many references in the course of this book to the fittings and appliqués in other materials which were mounted on otherwise wooden furniture. These fittings can be broadly divided into structural and decorative elements. To the first group belong bronze corner brackets on bedframes, bronze or iron door and window fastenings and bone hinges. Amongst the second group we can include the bronze casing on bed legs and bronze and ivory appliqués for *fulcra*.

⁶¹⁸ For examples from Herculaneum, see appendix 1: 16-5-1933 (boards of a bed); 29-3-1940 (small wall cupboard, hanging in room E in the *Insula Orientalis* I 1a); 5-12-1928 (bed); 9-1-1929 (board and legs of a bed). Amongst the preserved furniture, the red colouring is found on the *biclinium* in the Casa dell'Alcova (cat.nr. 6) and on the bed in the Casa del Mobilio Carbonizzato (cat.nr. 7).

⁶¹⁹ Storage furniture: Pompeii I 6, 7, cf. NSc 1912, 248; Pompeii I 6, 3, cf. NSc 1912, 252; bed with boards painted red: Casa del Menandro, room 43, cf. Maiuri 1932A, 206-207 and 210.

⁶²⁰ Cf. Kühlbom 1990, 184.

⁶²¹ Pasqui 1897, 477: 'a fasce di vario colore con fondo rosso.' In Pompeii (*Regio I, Insula 6*) a door painted in blue and yellow has been found, either for a room or for a cupboard, cf. NSc 1912, 181. Petrie (1927, 45 no. 11/12) presents two pairs of bed-legs from Roman Egypt with polychromy. In terms of form, however, the legs are wholly in the tradition of Egyptian furniture and it is therefore dangerous to use them to represent Roman polychromy on wooden furniture. The bed from Roman Egypt in the Royal Ontario Museum in Toronto, acc. 910.27 (from Thebes?) also has vestiges of paintwork, cf. Needler 1963, 1-2.

⁶²² Sulpicius Severus, *Dialogi* 1.21.4: *pingit armaria* (he painted the cupboards). A painted bed may be described in *Martialis* 14.85, but it is also possible that a decorative grain is meant here: *Lectus pavoninus* (*tit.*)/ *Nomina dat spondae pictis pulcherrima pinnis/ nunc lunonis avis, sed prius Argus erat.* (A peacock bed. This couch owes its name to the beautiful creature with colourful feathers, now the bird of Juno, but before he was Argus.). Richter (1966, 125-126) makes only a brief mention of decoration on furniture.

⁶²³ Cf. Moss 1988, 90-95.

⁶²⁴ The top surface of an Etruscan terracotta foot-stool in the Allard Pierson Museum in Amsterdam (inv. 11.342) is painted in yellow and dark red bands which form rectangles. Brijder (1987, 69 and fig. 4), who published the piece, wonders if two different types of wood, a dark one and a light one, are being imitated. Another alternative might be the imitation of a painted wooden panel.

⁶²⁵ See appendix 1: 13 and 20-10-1759.

Certain structural elements could also be finely decorated, of course, which places them midway between the two groups. The most frequently occurring materials are bronze, iron and bone, but we also find ivory and precious metals. Of course, precious metals were the exception due to their high cost and this may be why they have not yet been found in Herculaneum. This section presents a broad survey of our knowledge of Roman furniture appliqué, to which the Herculaneum finds make a very important contribution.

4.7.1 Bronze and iron

Bronze furniture fittings are found everywhere in the Roman world, coming primarily from wooden couches, beds and chests.⁶²⁶ The bronze elements on couches, which mainly come from *lecti tricliniarii* (fig. 26),⁶²⁷ can be divided into three groups according to the form and position of the item:

1. turned elements from the legs;
2. corner brackets from bedframes;
3. appliqué for *fulcra*, the S-shaped rests which were mounted at the heads of *triclinium* couches.

The corner brackets and the *fulcrum* appliqué were partly structural and partly decorative, whereas the bronze casing on the legs was purely decorative. Even a solid bronze leg would not have long stood up to the heavy pressure placed upon it. When the bronze elements of bed legs are found they are usually hollow, which means that their original core has entirely decayed. An exception is provided by two legs of the bed in the Casa del Tramezzo di Legno in Herculaneum (cat.no. 1; figs. 34-35), and another by two legs from a couch in the Casa di Nettuno ed Anfitrite (cat.no. 8; fig. 61). In all these examples wooden rings have been threaded on to a solid iron rod and then covered by a bronze casing. The same arrangement can be observed in several loose legs now in the Magazzino Archeologico at Herculaneum.⁶²⁸ It is the iron rod, running through the middle of the turned elements for the full length of the leg, which provides the strength required to bear the bed. The production of such legs must have been highly labour intensive (fig. 27). The wooden rings would first have been made on a lathe, and a round hole bored through them. A thin bronze sleeve was then forced over the individual rings, which were then returned to the lathe. Next the loose rings were threaded in a set order on to an iron rod, which was then attached to the hollow bronze foot. This foot was not turned. It had a rectangular base and the sides were modelled into a stylized double lion claw. At the top there was a round hole into which the rod was inserted. The flat front was often given a carved or inlaid decoration, usually of floral motifs. These feet were usually linked in pairs across the ends of the bed or couch by a wooden stretcher which fitted into

⁶²⁶ The main publications in this field are: Neugebauer/Greifenhagen 1932; Pernice 1932; Boube-Piccot 1975; Faust 1989. For bronze appliqué on marble tables cf. Moss 1988, 82-86.

⁶²⁷ Cf. Mau 1896; Mols 1992 (review of Faust). They are probably the *lecti aetati* mentioned by Cicero (Ver. 2.4.60). The Museo Nazionale in Naples possesses reconstructed *lecti tricliniarii* from Pompeii, inv. 78614-78616, cf. Ruesch 1908, 382 no. 1739-1741; Richter 1926, 130-133 and figs. 308-315; Richter 1966, figs. 532-534. One of these is still intact: Boriello et al. 1988, 186-187 no. 97. A reconstructed bed from Boscoreale is in the Staatliche Museen in Berlin, cf. Pernice 1900, 177 and Richter 1966, fig. 530. In room 17 of the Casa dell'Efebo in Pompeii (I 7,7) substantial remnants of *lecti tricliniarii* were found, under which were examples of bronze elements from all three of the categories outlined below in the main text, cf. NSc 1927, 79-81. The bronze elements of the Amiternum bed in the Capitoline Museums have recently been beautifully documented in Pirzio Biroli Stefanelli et al. 1990, 162-171, figs. 119-137. For Etruscan beds with *fulcra* from the 3rd century B.C. onwards, see Steingraber 1979, 11-13: 'Klinientyp 2b'.

⁶²⁸ Magazzino Archeologico, Herculaneum, inv. 76, 77 and 255, found respectively on 26 October 1927 in room 11 of the Casa a Graticcio (ground floor), on 8 November 1927 in the same place and on 9 March 1928, probably on the upper floor of the Casa Sannitica; see appendix 1. Cf. Mutz 1972, 166-167 Abb. 487-490. A bed leg with a wooden core and a bronze casing was also found in the Casa degli Amorini Dorati in Pompeii (VI 16, 7) cf. Seiler 1992, 69 (with literature).

their open backs (figs. 34-35).⁶²⁹ The iron rod protruded above the turned elements at the top and the whole construction was thereby attached to the bedframe. In some cases the rod passed right through the bedframe and was set off at the top by a horizontal bronze disc, also produced on the lathe (fig. 26). This sort of disc would often serve to support the bronze appliqué of the *fulcrum*. The bed in the Casa del Tramezzo di Legno, however, has boards rather than a *fulcrum* and thus there is no room for the rod to extend above the bedframe (fig. 34).⁶³⁰

The legs of *lecti tricliniarii* often had the same form. There could be variations in detail and size, but in general there is a certain standardization apparent in the sequence of turned elements and in the feet (fig. 2 right; figs. 26-27, 34).⁶³¹ This type of leg had a long history. Probably appearing in the late 3rd or early 2nd century B.C., it had developed from a Classical Greek leg form which had been given a bronze casing (fig. 2 left) under Persian influence.⁶³² The form remained in fashion for a long time, certainly until well into the 1st century A.D.. The legs of the bed on the Casa del Tramezzo di Legno were not the only examples found in Herculaneum. From the very start of excavations many bronze elements from bed legs came to light which, on the basis of the descriptions in the excavation reports, we can assume to have been the same type. For most of them the find spot and present whereabouts are unknown.⁶³³

This standardization is absent from the large number of legs which were not encased in bronze.⁶³⁴ We are familiar with them from depictions, but we also find examples in Herculaneum and Pompeii.⁶³⁵ Ransom (1905, 33-35), who thought the new sequences of variously shaped wooden rings created 'ugly patterns', reckoned that they began to oust the more standardized type with bronze casing at the end of the 1st century A.D. (see § 3.2.1; fig. 3). Since she had not seen any original wooden bed legs, Ransom had to rely on depictions of this 'new type'. Finds of legs in Pompeii and Herculaneum which are quite different from the standardized 'bronzed' form show that, at the very least, the 'new type' must have been in use before 79 A.D.. How far it goes back remains unclear. Beyond Pompeii and Herculaneum there is only one known example, which comes from the Fayum in Egypt. Perhaps the explanation for their absence is simply that they were

⁶²⁹ The reconstruction of a bed in Modena (Ortalli 1989), in which wooden stretchers connect the legs lengthwise as well as crosswise, is just not plausible. Stretchers were only fitted at the ends.

⁶³⁰ Cf. Faust 1989, 28.

⁶³¹ Detailed descriptions of this type of bed leg are given by: Boucher 1982, 176-177 and fig. 6; Boube-Piccot 1960, 191 and 1975, 7; Faust 1989, 22-28. The technique is discussed by Mutz 1972, 14-17 and 166-167. The idea that the form of the base is derived from two animal claws, placed back to back, comes from Boube-Piccot (1960, 262). Pliny reports that the name of a species of plant (probably wild basil) is derived from this type of bed leg, whose form it resembles (Nat. 24, 137): *Clinopodium*: ... *orbiculato foliorum ambitu speciem lecti pedum praebentem*. (*Clinopodium* ('bed leg plant'): ... the position of the leaves running round the plant giving the appearance of bed legs.).

⁶³² The Classical Greek leg form is thoroughly described in Kyrieleis 1969, 116-151: type A, appearing at the end of the 6th century B.C.; cf. also Richter 1926, 67-71; Faust 1989, 25-27 ('Form 3'). Barr-Sharrar (1987, 6-7) dates the addition of bronze fittings too early (second quarter of the 4th century B.C.). For Assyrian furniture with bronze appliqué cf. Baker 1966, 197-200 and figs. 326-331.

⁶³³ Similar legs found in Herculaneum are recorded under the following dates (see appendix 1): 28-4-1740 (4 examples with wooden core); 28-8-1756 (with wooden core); 26-5-1758; 14-8-1758; 5-12-1759; 6-8-1760 (with wooden core); 18-10-1760 (with wooden core); 27-3-1762; 2-9-1763; 3-9-1763 to 22-9-1763 (4 examples); 26-10-1764; 1-10-1833 to 18-6-1834 (23 fragments); 19-6-1834 to 30-12-1835 (6 fragments); 28-5-1869; 1-7-1869 (ground floor of house II 5); 17-2-1871 (first floor Casa dello Scheletro, including an iron rod as core); 5-7-1927 (Casa dello Scheletro); 11-2-1935 (Casa della Gemma, ground floor). Cf. also Mutz 1972, 166-167, Nr. 487-490. Examples of bed legs with iron rods and bronze casing from beyond Herculaneum: Pompeii VI 14, 38: four legs with remnants of the wooden core, cf. NSc 1877, 95; Pompeii I 6, 7: several legs with iron rod, cf. NSc 1912, 289; Boscoreale, Villa di Contrada Pisanella, cf. Pasqui 1897, 476-477 no. 80 and fig. 54 and Scarfoglio 1988, 64-65 cat. 44. Boube-Piccot (1975, 15) mentions an alternative filling for the core: two legs from Morocco in which a cement-like substance is found inside the bronze elements. For a technical study of the bronze from a bed leg in Basle, see: Seiterle/Mutz 1982, 66-70.

⁶³⁴ Leg forms incorporating figural scenes remain outside the scope of the present study. Most of them date from the Hellenistic period, cf. Faust 1989, 23-25 ('*Beinform 5*' with variations); Roman bed legs of solid bronze in Modena (Museo Civico inv. 6393-6394; 6400-6404; 6412) are dealt with by Faust 1989, 142 and 183-184 Kat. 202-203; Ortalli 1989, 343-352 and figs. 270-271.

⁶³⁵ In the bed in the Collegio degli Augustali in Herculaneum (cat.nr. 10; afb. 67 B, G; afb. 68) and in the bed of which a part is preserved in the Casa del Fabbro (I 10, 7) in Pompeii (see appendix 3 and figs. 193-195).

made of wood and iron (the central rod), both of which are more perishable than bronze.⁶³⁶

Bronze brackets were generally fitted at the corners of the bedframe in the *lectus tricliniaris* (fig. 26). They are constructed from two parts brazed together at an angle of 90° and often mitred. They were attached to the bedframe with iron or bronze nails driven vertically into the wood. Remains of these nails have often survived.⁶³⁷ First and foremost the brackets strengthened the corners of the wooden bedframe, but on the visible side they were usually embellished with a geometric or floral design.⁶³⁸ In simple examples this is merely engraved, but in the more costly pieces it is finely inlaid with various metals, such as copper, silver (sometimes worked into niello) and glass paste, which together create a polychrome effect. This type of corner bracket is mainly associated with *lecti tricliniarii*, but the only bed on which they are still present today, the one in the Casa del Tramezzo di Legno (cat.no. 1; figs. 34, 35 F), is of another type (*lectus cubicularis* or *grabatus*, see § 3.2.1).⁶³⁹

Many *lecti tricliniarii* had a *fulcrum* mounted on top of the bedframe at one end. This was a curved rest, made largely of wood but strengthened and ornamented on both sides with bronze appliqué. Such appliqué (which are often mistakenly referred to as *fulcra* in the modern archaeological literature) were generally constructed from four separate bronze elements (fig. 26). An S-shaped base carried three decorative pieces: two tondo's, one at each end, with a plate linking the two. In the plainer versions the tondi were given a simple rosette in bas-relief. In the more elaborate and expensive examples there are busts of animals, mythological figures or gods, mostly from the world of Dionysus/Bacchus. Thus on the lower tondo we often find a bust of Silenus⁶⁴⁰ and on the upper one the head of an animal, often a mule, but also ducks, horses, dogs, lions, panthers and elephants. Several examples have mythological figures such as winged cupids at the top.⁶⁴¹ The bust and the animal head are almost always facing each other, forming an integrated decorative whole.⁶⁴² The bronze plate between the two tondi is often decorated with an engraved or inlaid design, either with mythological scenes or floral-geometric motifs. Besides the examples assembled from four parts, there were also *fulcrum* appliqué fashioned from a single piece, but none are known from Herculaneum.⁶⁴³ Busts of Artemis/Diana can also occur on the lower tondo in place of Bacchic figures.⁶⁴⁴ The bronze appliqué were fixed to the wooden *fulcrum* with nails.⁶⁴⁵

Little is known about the form and possible decoration of the *fulcrum*'s wooden structure.⁶⁴⁶

⁶³⁶ The Herculaneum excavation reports several times refer to wooden legs of the type mentioned here. Their find spot and the present whereabouts are not always known. These items are included in appendix 1: 12-9-1740; 9-8-1756; 8-10-1756; 1-5-1869; 10-5-1928 (upper floor Casa Sannitica, entrance V 2, in this case preserved, inv. E 255); 9-1-1929; 8-9-1937 (V 19-22, first floor); 3-6-1939 (Casa del Salone Nero, first floor). For the example from the Fayum, cf. Petrie 1927, 45 nr. 14.

⁶³⁷ Cf. Pernice 1900, 178.

⁶³⁸ Boube-Piccot (1960, 258-259) identifies three decorative schemes: 1) complicated leaf motifs, possibly with berries, sometimes with birds; 2) plain leaf and flower motifs, into which laurel, olive branches, garlands, palmettes, rosettes and fantasy vegetation could be worked; 3) purely geometric motifs. See also Faust 1989, 69-71. An example in the Museo Nazionale in Naples: Boriello et al. 1988, 184-185 no. 87 (inv. 5451 and 70990).

⁶³⁹ In Herculaneum, corner brackets were usually found loose. Sometimes their find spot or current whereabouts are unknown. See appendix 1: 19 and 20-6-1761; 12 and 13-3-1762; 25-6-1929 (Casa dell'Atrio a Mosaico, inv. E 433, the example is inlaid in silver and gold with palmettes and acanthus leaves which are flanked at the ends by garlands); several examples are still preserved in the Magazzino Archeologico at Herculaneum. Their find spots are not known: inv. E 2711, 2784 (3 examples) and 2786. For examples from Boscoreale see Pernice 1900, 178-180: here the corner brackets are inlaid with a meander in silver and red copper; cf. also Richter 1966, 108 and fig. 545.

⁶⁴⁰ Cf. Barr-Sharrar 1987, cat. C1-C49 (Silenus); Faust 1989, 95-116.

⁶⁴¹ Cf. Faust 1989, 71-95.

⁶⁴² Cf. Barr-Sharrar 1987, 1; Faust 1989, 35.

⁶⁴³ The construction of *fulcrum* appliqué and the variety of motifs used in them has recently been dealt with very thoroughly by Faust (1989, 29-128); cf. also Boube-Piccot 1960, 191-192; Barr-Sharrar 1987, *passim*; Faust 1992, *passim*.

⁶⁴⁴ Barr-Sharrar 1987, cat. C50-C69 (Artemis); Faust 1989, 100-102.

⁶⁴⁵ Cf. Faust 1989, 39 and 140.

⁶⁴⁶ Fragments of the wooden frame of a *fulcrum* were found in the Antikythera shipwreck: now in the National Museum in Athens inv. 15100, cf. Bol 1972, 39.

Depictions and the remnants of wood found in an appliqué from Pompeii show us that this was generally solid and not, as B. Barr-Sharrar has suggested, open.⁶⁴⁷ A small number of depictions have been found which show *fulcra* decorated on the back, with panel decorations or carved mythological figures for example. Faust mentions these without drawing an explicit conclusion about the central section.⁶⁴⁸ We can assume, however, that the custom was to decorate it. No pieces with a *fulcrum* still in place have been found in Herculaneum, but many loose appliqués have survived, indicating that there were indeed couches with *fulcra* in the town.⁶⁴⁹

A. Mau has plausibly argued that *fulcra* did not serve as supports for the back and arms during eating (as on Greek beds), but rather to stop the mattresses from slipping.⁶⁵⁰ Therefore only the two couches which faced the open room, the *lectus summus* and *lectus imus*, carried them (figs. 26, 30). The *lectus medius* did not need a *fulcrum*, because its mattress lay wedged between those on the other two.⁶⁵¹

The Bacchic atmosphere expressed in the iconography of many *fulcrum* appliqués may well have been linked to the function of these couches, which was to accommodate people as they reclined to eat, drink, and converse.⁶⁵² Depictions of couches with *fulcra* certainly suggest as much.⁶⁵³

⁶⁴⁷ The find at Pompeii (I 6, 8) is described in the NSc 1912, 142-143: 'si raccolse una magnifica spalliera di letto, qui riprodotta dalla fig. 2. Consiste di una sottile lamina di bronzo (alt. m. 0,265) che seguiva l'andamento del legno, ...'. Barr-Sharrar (1987, 4 and note 5) considered the solid wooden middle section proposed in various reconstructions of *fulcra*, to be 'unsatisfactory and misleading in its heaviness.' However, depictions of Roman *fulcra* do indeed indicate that the wooden middle was fully closed. Barr-Sharrar is quite right in saying that in the earlier Greek versions the two ends were linked by two or three wooden slats. Perhaps the addition of quite heavy bronze appliqués to these elevations led to the fitting of solid wooden centres. For Greek precursors, see also Faust 1989, 82-86 and Abb. 1-8.

⁶⁴⁸ Examples are: A marble copy of a *fulcrum* with architectonic decoration, set in the wall of the stairwell of the Palazzo dei Conservatori in Rome (cf. Stuart-Jones 1926, 96 and pl. 34 (gall. 37); Faust 1989, 206, Kat. 352 and Taf. 32, 3-4); a marble *fulcrum* in the Museo Archeologico in Florence, inv. 72700 (Faust 1989, 170, Kat. 91; Faust 1992, 107-108 and Abb. 39) likewise reveals an architectonic decoration on the back, which here is filled in with mythological figures. These in turn resemble two *fulcra* depicted in erotic scenes: on a bronze mirror in the Capitoline Museums in Rome (cf. Faust 1989, Taf. 33.1) and on a lost terracotta vase appliqué, once in Vienna (cf. Wuillumier/Audin 1952, 26 no. 8). Two marble *fulcra* from Baiae, found in the *nymphaeum* of Punta Epitaffio (Faust 1989, 159, Kat. 22-23 and Taf. 31) have a panel decoration on the back. To the marble examples with architectonic decoration on the back given by Faust, we can now add one more: Museo Gregoriano Profano of the Vatican Museums, sez. 11, inv. 5317, cf. Sinn 1991, 63-64. On the back of the sideboards of two klinè monuments there are *imagines clipeatae* in relief, topped by panels with circular floral motifs. The shields imitate metal appliqués on a wooden background; one example comes from Palmyra, tomb N. 186, the other is now in the Ny Carlsberg Glyptotek in Copenhagen, inv. 1148.

⁶⁴⁹ Examples of appliqués for *fulcra* in the Magazzino Archeologico at Herculaneum are: bronze heads of a mule (inv. E 429) and a swan (inv. E 430), both found on 15-6-1929 in the Casa dell' Atrio a Mosaico; horse's head (inv. E 1118), found on 27-7-1933 in *Insula V* 26; the head of a swan (inv. E 1214), found on 27-2-1934 in the Casa della Gemma; busts of a winged Attis (inv. E 2210 bis), a winged satyr (inv. E 2211 bis) and of Minerva (inv. E 2212 bis), all three found on 19-10-1960 in excavations on the *Decumanus Maximus*. For the find spot of inv. E 429, Boube-Piccot (1975, 374 no. A 80) and Faust (1989, 174, Kat. 128) mistakenly give the Casa del Bel Cortile. For inv. E 1118, cf. Boube-Piccot 1975, 374, no. A 79; Budetta/Pagano 1988, 58-59, cat. 20 and p. 104; Faust 1989, 174, Kat. 130: all mistakenly give the *Insula Orientalis* II 8. However, the excavation reports state that the find was made on the west side of *Cardo* 5 and not on the east side. Faust (1989, 174 Kat. 129) also gives a bird protome (without an inventory number), which is probably the same as Herculaneum, inv. E 1214. We have been unable to trace a mule protome, mentioned by Technau (1930, 388-389), Boube-Piccot (1975, 375 no. A 83) and Faust (1989, 174 Kat. 131), which was apparently found on the west side of the so-called *Decumanus Minor*. In the Museo Nazionale in Naples there are several appliqués from *fulcra* which possibly come from Herculaneum: mule protomes, inv. 72732-72736, cf. Budetta/Pagano 1988, 59; Faust 1989, 185-186, Kat. 214-218 (both with bibliography).

⁶⁵⁰ Mau 1896, 76-82.

⁶⁵¹ Cf. also Ortalli 1989, 353; Mols 1992, 192.

⁶⁵² Cf. Greifenhagen 1930, 149; Boube-Piccot 1960, 254; Faust 1989, 129-131. Early inaccurate reconstructions, which underestimated the amount of antique wood present, turned elements of this type of bed into so-called *bisellia* (as was done, for example, by Castellani 1874, 22-32). The first correct interpretation is: Amelung 1902, 207. Faust (1989, 40-60 and Beilage) has drawn up a relative chronology based on her collection of *fulcrum* appliqués. When the written sources refer to *triclinia aërata* or *lecti aërati* (Cic., Ver. 2.4.60; Plin., Nat. 34.14; id. 37.12), they probably mean wooden beds with bronze fittings. The link made by some (Neugebauer/Greifenhagen 1932, 42; Diehl 1960, 210) between beds of this type and the *lecti deliati* (Plin., Nat. 34.9) rests on too little evidence. Most of the written sources are given by Faust 1989, 31-33 (and see also Mols 1992, 191-193).

That Artemis/Diana and dog protomes sometimes appear on appliqués can be explained as a reference to the hunt, similar to the hunting dog motif found decorating the legs of dining tables (see § 3.3). Sometimes the Goddess is dressed in the deerskin (*nebris*) of a Maenad, which links her to the purely Bacchic scenes.⁶⁵⁴

In one instance we have information on the size of this type of couch. Pernice (1900, 178-180) gives the dimensions of three examples, deduced from slide marks on the floor of a room in Boscoreale: 2.32 m long x 1.205 m wide (c 8' x 4').⁶⁵⁵ Funerary beds were derived from reclining couches but were probably smaller. The so-called Capitoline *bisellium* is assembled from the remains of a bed found in a grave in Amiternum. This measured 1.80 m x 0.46 m (c 6' x 1½').⁶⁵⁶

There were often wooden chests with iron or bronze fittings standing in the *atria* of the houses in Pompeii and Herculaneum (fig. 28). Several are still *in situ*, such as the example in the Casa dei Vetti (VI 15, 1) and that in the Casa di M. Obellius Firmus (IX 14, 4) at Pompeii. While the wood is decayed, the metal is often preserved intact. Such chests served as strong-boxes for valuables and money. To prevent theft they were often equipped with ingenious heavy locks and were anchored in the specially raised floor.⁶⁵⁷ The fittings were attached to the wood with large-headed studs which also had a decorative function. The most costly chests sported appliqués in relief, usually busts of mythological figures and generally in pairs facing each other.⁶⁵⁸ In most cases there seems to be no iconographical link between the mythological figures and the function of the chests.⁶⁵⁹ However, two chests from Eckartsbrunn in Germany are exceptions to the rule; M. Kemkes (1991, 354-359) has used the iconography of the fittings (in one case busts of Bacchus, in the other *lunulae*), to convincingly argue that the chests were the respective property of a man and a woman. Only metal fragments from chests of this type have survived in Herculaneum.⁶⁶⁰ In the written sources they are referred to as *arcae aeratae* or *arcae ferratae*.⁶⁶¹

⁶⁵³ Examples are found on grave reliefs from Kertch in the Crimea, on which this type of bed is always represented in combination with round three-legged tables, cf. Kiezeritzky/Watzinger 1909, Taf. L-LV; the dates of these 14 reliefs run consecutively from the 3rd century B.C. through to the 2nd century A.D.; other examples are depictions on Arretine *terra sigillata* from the workshop of M. Perennius Tigranus (c. 30 B.C.- 40 A.D.) which show this type of bed in *symposium* and erotic scenes, cf. Dragendorff/Watzinger 1953, 86-90, N° XIII and XIV.

⁶⁵⁴ Cf. Barr-Sharrar 1987, 154; Faust 1989, 100-102.

⁶⁵⁵ The bronze parts are now in the Museo Nazionale in Naples, inv. 8903-8904.

⁶⁵⁶ Cf. Pasqui 1907, 146. A very interesting find has been made in Switzerland (Baugy), where the impression of a *fulcrum* has been left behind on a wall painting from the second half of the 1st century A.D., cf. Fuchs 1993, 120 figs. 13 and 125.

⁶⁵⁷ Cf. the survey by Pernice 1932, 71-99 and Taf. 43-58. He deals with the ornamentation and iconography of seven chests, which include the two mentioned. He also refers to 24 bases; we can also add a chest in the *atrium* of the Casa dei Quadretti Teatrati (I 6, 11) to his list, cf. NSc 1929, 421; Richter (1966, 114 and fig. 581) gives one example from Pompeii, now in Naples, Museo Nazionale inv. 73021; there are several instances of wooden remains being found but subsequently lost: one example of this is a chest found in a house in Regio IX 5 (March 1879), cf. NSc 1879, 101-102; another such chest stood in the *atrium* of the Villa of San Marco in Castellamare di Stabia, but here only the base is preserved. A similar chest was found in the Villa B at Oplontis, on the eastern side of the *porticus* of the *peristylum*, cf. Lagi De Caro 1983, 374 and fig. 12.

⁶⁵⁸ Cf. Barr-Sharrar 1987, 14. An example from Pompeii is in Naples, Museo Nazionale inv. 73021, cf. Boriello et al. 1988, 80.

⁶⁵⁹ Cf. Barr-Sharrar 1987, 156.

⁶⁶⁰ See appendix 1: a very costly chest must have been found between 22-2-1741 and 4-3-1741 (the appliqués showed figures from the retinue of Bacchus; find spot and present whereabouts unknown); finds of simpler examples are also mentioned: 17-4-1745 to 30-4-1745; 22-10-1752; 21-8-1756; 28-8-1759; 1-9-1759; 8-12-1764; 16-1-1828 (first floor Casa d'Argo); 4-10-1937 (V 19-22, first floor).

⁶⁶¹ Iuv. 11.23-27; id. 14.259; Dig. (Ulpianus) 19.2.19.5; cf. also Claudianus, In Eutropium 192-196 (in connection with a lock) and V. Max. 4.8.ext. 2. The construction of these chests was different from that of the wooden chest in Herculaneum (cat.nr. 41). They were covered in metal and the sides were always fitted to four corner posts, which protruded under the chests as legs. Grodte (1989, 134-137) calls this the '*Stollenbauweise*'. Pernice 1932, 71-94 examines this kind of chest at greater length. Kemkes (1991, passim) in his article on the Eckartsbrunn chests gives a reconstruction of the wooden parts (p. 359-361 and Abb. 38-39); his reconstruction is convincing, except for the overhanging lids. None of the depictions of Roman chests show the lid protruding so far out in front. Cf. also Rabold 1989-1990. For busts as chest appliqués, see Barr-Sharrar 1987, passim: she gives examples in her catalogue: C 69, C87, C122, C123, C147, C 173, C174, C175, C188. For late-Roman chests with bronze fittings, see Gáspár 1986.

Bronze studs constitute a separate category of fitting. They are found mainly in wooden chests and cupboards. The round heads, sometimes decorated with concentric circles cut on the lathe, prevented damage to the wood.⁶⁶² For the same reason they were hammered into domestic doors, as can be seen in the cast of the front doors to the house of Octavius Quartio at Pompeii (II 2, 2), but here they generally have a larger format than those found on chests. This was not always the case, however, as is clear from the wooden partition wall which has lent its name to the Casa del Tramezzo di Legno in Herculaneum. Here the door studs have small heads. It thus can be difficult to establish the original source of such studs when the wood itself has decayed.

Chests and cupboards often had locks, hinges or handles made of bronze or iron.⁶⁶³ Many finds from Herculaneum and Pompeii, and from elsewhere, indicate that lockable storage furniture was an important component of the Roman household inventory.

Another type of bronze appliqué for wooden furniture found in Herculaneum takes the form of hollow human feet, around 7 cm. long, which are cut off just above the heel. At the top of each foot there are four or more holes, intended for pins which attached it to a round wooden leg.⁶⁶⁴ The finding of four examples in the Casa del Moralista at Pompeii (III 4, 2-3), together with a bronze folding mechanism, enables us to identify these feet as appliqués for the legs of folding stools with leather or textile seats.⁶⁶⁵ The remains of a similar folding mechanism and four accompanying bronze feet have come to light in a grave in Catalka, Bulgaria.⁶⁶⁶ There are many other examples found throughout the Roman Empire.⁶⁶⁷ More rare are folding stools with solid bronze legs in the form of ibis heads. Two such stools were found in the theatre at Herculaneum. We can assume that these were seats of honour or official seats, while the type with human feet was for more everyday use.⁶⁶⁸

4.7.2 Bone and ivory

Ivory and bone could also be used in bed appliqués⁶⁶⁹ but unlike bronze they were purely decorative and had no load bearing function. Bone should be regarded here as a cheap alternative

⁶⁶² There are no stud nails preserved in the Herculaneum furniture, but there is a studded cupboard documented from Pompeii: Casa dei Quadretti Teatrali (I 6, 11), cf. NSc 1929, 422.

⁶⁶³ Locks in Herculaneum: see appendix 1: 9-5-1761; early March 1828 (chest with lock, first floor Casa d'Argo); 11 to 15-2-1871 (small chest with lock); 4-9-1874 (chest with lock); 17-2-1928 (chest with lock). The only cupboard in Herculaneum in which the vestiges of a lock are possibly preserved is cat.nr. 40; examples of locks and hinges in Pompeii are mentioned in: NSc 1901, 302-303: chest with lock and hinges in house V 3a; NSc 1908, 56: chest with lock in house VI 16, 10; NSc 1913, 29 and 32: three cupboards with metal hinges and lock in house I 6, 4; NSc 1913, 450: storage furniture with lock in house I 6, 1; NSc 1916, 438 (of a cupboard), NSc 1929, 182 (two cupboards with bronze locks). For studies relating to locks see Koeppen/Breuer 1904, 179 and 214-216; Jacobi 1930, 220; Gaheis 1930; Grodte 1989, 143-144; Dietz (1979, 324-326 and Abb. 108) gives a reconstruction of a wooden chest with lock and key from Regensburg, Museum Stadt Regensburg Inv. MSR A 3756 and 1739. Handles in Herculaneum: see appendix 1: 23-12-1756; 20-11-1759; 30-5-1760; 12-7-1760; 3-10-1760; early June 1828. For handles in Pompeii see, for example: NSc 1921, 418 (chest with bronze handles and hinges); Pernice 1925, 19 and Abb. 29. Handles from Magdalensberg: cf. Deimel 1987, 99 and Taf. 92-93; handles and nails with large heads are also found at Diersheim, Lkr. Kehl, Baden-Württemberg, cf. Grodte 1989, 288 Kat. 305 and Taf. 18.4.

⁶⁶⁴ Herculaneum, see appendix 1: October 1830 (probably Casa del Genio); 4-4-1871 (Casa del Tramezzo di Legno, north-east corner, a right foot 6 cm long). The Magazzino Archeologico also contains four examples whose origins are not known (inv. E 2546 en E 2547). Pompeii: V 2, ?, cf. NSc 1883, 376; V 3, 4, cf. NSc 1888, 574 (4 examples); one and four pieces from the Casa del Menandro (I 10, 4), cf. respectively Maiuri 1932A, 210 and 434.

⁶⁶⁵ Della Corte 1930, 57-58 fig. 26.

⁶⁶⁶ Cf. Bujukliev 1986, 124 tab. 22 nr. 313.

⁶⁶⁷ For examples from various places in the Roman Empire and a suggested reconstruction cf. Mols (1994A).

⁶⁶⁸ Folding stool from Herculaneum: cf. Ruesch 1908, no. 1790 and 1792; Richter 1926, 126 and fig. 300; Richter 1966, 103 (note 6) and fig. 527; Schäfer 1979, 143-148. The origin of this ibis-head motif is Egyptian and appears especially from the 18th dynasty onwards. These Egyptian items were always important seats of honour, cf. Dittmann 1955, 46-53; Baker 1966, 87-89.

⁶⁶⁹ Cf. Faust 1989, 144-145.

for ivory.⁶⁷⁰ We find both used to decorate bed legs, but they appear mainly in *fulcrum* appliqués.⁶⁷¹ In contrast to the bronze versions, ivory appliqués for *fulcra* were usually made from a single piece while bone examples were assembled from a large number of small plates. The decoration (in low-relief, unlike the high-relief of the bronze examples) generally covered the whole side surface. A popular motif was the reclining Dionysus/Bacchus, but we also encounter busts of mythological figures or animals.⁶⁷² No examples are known from Herculaneum, but they have been found in neighbouring Pompeii and in Boscoreale. Grave finds indicate that this kind of ivory and bone appliqué was often mounted on funerary beds.⁶⁷³ Much more simple are the little sticks of bone which form a geometric decoration on a bed in the Casa del Sacello Iliaco in Pompeii (I 6, 4; cf. appendix 3).⁶⁷⁴

Besides bed appliqués, we often find other plaquettes and strips in bone or ivory whose function, though not always clear, was probably linked to furniture decoration. They may have been appliqués for small chests and cupboards, like the 'toilet' cupboard in Herculaneum (cat.no. 40). According to the excavation reports, there were bone mouldings or strips inlaid in the doors of a cupboard which has since been lost.⁶⁷⁵ A passage in Seneca makes it clear that this kind of decoration was not uncommon.⁶⁷⁶

⁶⁷⁰ One antique text about bone as a cheap alternative to ivory is Plin., Nat. 8.7: *Hoc solum ebur est; cetero et in his quoque quae corpus intexit, vilis ossea. Quamquam nuper ossa etiam in laminas secari coepere paenuria.* (Only this is ivory; and the bone of this animal too (i.e. the elephant), where it is covered by its body, is cheap. Nevertheless, people have recently begun to cut even bones into slices, out of scarcity).

⁶⁷¹ Examples of legs with a central iron rod and covered by ivory or bone: bed legs with ivory appliqués, found on 3 June 1769 in the *palaestra* near the theatre of Pompeii, cf. Fiorelli 1860, 232; Pompeii VI 16, 15, with ivory appliqués, cf. NSc 1908, 75; Pompeii, Casa del Menandro (I 10, 4): iron rods with bone appliqués (Maiuri 1932A, 210); two legs from a grave in Ancona with ivory appliqués, cf. Brizio 1902, 451 fig. 18 and 455; a bed with ivory appliqués in Cambridge, cf. Nicholls 1979, 4 and 9; the legs of two funerary beds from Aielli with bone covering, cf. Faust 1989, 205, Kat. 347-348 and Fata 1989, 281; Vindonissa: the wooden core of a leg which may have been covered with bone, cf. Faust 1992, 107 and Abb. 36. Fragments of the wooden end of a *fulcrum* were found in a shipwreck from the 1st century B.C., near Ladispoli, c. 40 km. to the north of Rome (D'Atri/Gianfrotta 1986, 207 figs. 10-11; Faust 1989, 139 and 225 Kat. 512 A). The top is carved into the head of a swan, suggesting that wood, as well as bronze or ivory, could be used for such things.

⁶⁷² For the motifs see: Faust 1989, 116-129.

⁶⁷³ A few examples from Pompeii: in April-June 1769 the remains of bed appliqués in ivory were found in very large quantities in the *palaestra* near the theatre, cf. Fiorelli 1860, 231-233; ivory inlay in a *lectus tricliniaris* from a *villa rustica* in Boscoreale: NSc 1921, 419. Examples of ivory fittings for *fulcra* also in: Graeven 1903, 48-52 and Abb. 30-31; id. 97-99, Abb. 59-61; Pesce 1932, 49 and fig. 8 (Pompeii); Cook 1964, 180-181 and fig. 24 (reconstructed bed in the Metropolitan Museum in New York, acc. 17.190.2076, now set up in the famous *cubiculum* from Boscoreale, where it does not belong). Many examples of bone and ivory, especially in funerary beds are given by: Letta 1984, passim, especially the catalogue on p. 95-112 and his bibliography on p. 103; Pasqui 1890; Brizio 1902; Kent Hill 1963; Atasoy 1974, 260-263 and ill. 6; Nicholls 1979; Béal 1986, 111-117; Talamo 1987-1988; Faust 1989; Letta 1990; Béal 1991, 285-317 (especially the inventory p. 314-317); Faust 1992, 100-107; Mollo-Mezzana 1992, 158-169; Talamo 1993. Written sources which mention ivory bed appliqués are: Ambrosius, Hexameron 6.8.52; Cassius Dio, Hist. 56.34.1; Hor., S. 2.6.103: *lectos ... eburnos* (beds with ivory appliqués); Macr. 3.13.11: *triclinia lectis eburneis strata fuerunt* (the *triclinia* were furnished with couches with ivory appliqués); Pl., St. 377: *Pi.: Lectos eburatos, auratos. Ge.: accubabo regie.* (Beds with ivory and gold fittings; I will recline like a king.); Prop. 2.13.21: *nec mihi tunc fulcro sternatur lectus eburno.* (not for me, then, a bed festooned with an ivoryed *fulcrum*.); Suet., Iul. 84.1 (funerary bed).

⁶⁷⁴ A bed found in the Casa dell'Efebo (I 7, 11) must have had the same type of intarsia with geometric patterns in bone, cf. NSc 1929, 353.

⁶⁷⁵ See appendix 1: 17-2-1928.

⁶⁷⁶ Seneca, de Tranquillitate animi 9.6: *Quid habes cur ignoscas homini armaria <e> citro atque ebori captanti.* (Why would you excuse a man who craves for cupboards of citrus and ivory?). From Pompeii we know of inlay in bone (diamond-shaped) on a lost cupboard in the Casa del Criptoportico (I 6, 2, cf. NSc 1929, 422); other examples from Pompeii: bone plates with decorative reliefs (leaf motifs and figures), cf. NSc 1913, 32-34 (Casa del Sacello Iliaco (I 6, 4); cf. also De Franciscis 1963, figs. 91-92 and tav. XCVI (ivory)). In a number of passages one comes across the *sella eburnea*, a wooden or bronze seat with ivory appliqués, which can be equated with the *sella curulis*. Texts on the subject can be found in Schäfer 1989, 48-50. The decoration of furniture with ivory and bone remained popular, also in the late-Empire and early-Christian periods. Thus we know of many small chests with ivory appliqués. Such a decoration also appears in several written sources: Catul. 64.45; Dig. (Ulpianus) 33.7.12.28 and 43; Claudianus, Laud. Stil. 3.199: *solio ... eburno* (on a seat with ivory fittings); id., Panegyricus de sexto consulatu Honorii 588. A small late-Roman chest, wholly of ivory, with incised decoration and a sliding lid, divided into six compartments inside: Petrie 1927, 36 and pl. XXXIII, 3. A workshop for bone-working with 47 unfinished bone pieces from the 4th century A.D. has been found in Colchester, Great Britain, cf. Crummy 1981, 277-285; for the working of ivory (and bone

Furniture was covered with ivory plaquettes containing reliefs long before the Roman period. The technique was already used in Northern Syria, Phoenicia and Anatolia during the 2nd millennium B.C.⁶⁷⁷ and was introduced via Assyria into Greece in the 6th century B.C.. The Romans adopted it from the Greeks during the Hellenistic period.⁶⁷⁸

Inlaid ivory is used in the decoration of several of the Herculaneum tables. In the table from the Casa del Bel Cortile (cat.no. 16; fig. 103) the eyes of the Bacchus heads are inlaid in ivory, as are the eyes of the griffins in the table from the Casa dell'Atrio Corinzio (cat.no. 18; fig. 111).

Bone hinges were often mounted on storage furniture. These were made from a number of small cylinders which were assembled in a band, alternately fixed and moving (fig. 29). The mechanism is similar to that of the modern piano hinge. Loose segments from such hinges constitute a familiar category of find, not only in Pompeii and Herculaneum but throughout the Roman world. For a long time their function was not understood and they were described in excavation reports as 'elements of flutes'. W. Deonna published an extensive discussion of this sort of hinge, occasioned by the plaster cast of a cupboard in Boscoreale.⁶⁷⁹ Indeed the identification of these cylinders is usually ascribed to him, or to F. Fremersdorf (1940, 321-337), in spite of the fact that they had already been correctly interpreted by G. Fiorelli in 1877!⁶⁸⁰

A large number of bone hinges are still preserved in the Herculaneum furniture. Examples are found in the lower section of the *aedicula* in the Casa del Sacello di Legno (cat.no. 29; figs. 139-140), in a cupboard (cat.no. 36; figs. 157-158) and in the 'toilet' cupboard (cat.no. 40; fig. 166). Hinges with a similar form but made of wood are found in the chest (cat.no. 41; figs. 170-171), in the *aedicula* in V 17 (cat.no. 28; fig. 138) and in the upper section of the *aedicula* in the Casa del Sacello di Legno (figs. 142, 145). Other examples, for which the find spot and the current whereabouts are no longer known, are included in appendix 1.⁶⁸¹

Hinges in bone can be regarded as more decorative than functional because they are not very strong.⁶⁸² It is therefore surprising to find them depicted on quite large doors in a painting in the tomb of Vestorius Priscus in Pompeii.⁶⁸³ In general, metal hinges were used for large doors. Fortunately our knowledge of the functioning of such bone hinges has been greatly advanced by the finds of segments (one from Vindonissa in Switzerland and another from Delos) with the

as an alternative) in the Roman period, see also Barnett 1982, 65-72; McGregor 1985, 55-72. A medieval piece with ivory appliqué, the throne of San Pietro in the Vatican, is the subject of a very thorough study by Maccarrone/Ferrua et al. 1971.

⁶⁷⁷ Cf. Barnett 1948, 24; Barnett 1954, 663; Baker 1966, 193-197 (Nimrud) and 206-209 (Syria/Phoenicia); Barnett 1975, 675; Winter 1976, 25-29 and 52-53; Barnett 1982, 9-15 (ivory working techniques) and 16-64 (pre-Roman ivory working). For the use of ivory appliqué in the Minoan-Mycenaean world, cf. Barnett 1948, 672-673; Jahn 1990, 106 and 265-266 Kat. 44. For furniture appliqué mentioned on Linear-B tablets see also Ventris 1955, 111 and 118-119; Higgins 1956, 39; Milani 1972, 37-41.

⁶⁷⁸ Cf. Barnett 1975, 672; for an example of a Greek bed appliqué cf. Rodziewicz 1968, 259. It might also have reached Greece from Assyria via Cyprus. Evidence for this is provided by ivory appliqué on thrones from Cyprus which reveal a clear Assyrian influence, cf. Karageorgis 1968, 99-103.

⁶⁷⁹ Deonna 1934, 85; Deonna 1938, 243-244.

⁶⁸⁰ Fiorelli, in: NSc 1877, 95. The flute interpretation is not so strange, given their immediate appearance. However, there are significant differences between flutes and hinge segments; in the dimensions, in the nature of the cavity (in flutes the cylinder wall is of equal thickness throughout), and in the holes bored through the cylinders. For this distinction see the article by Bélis 1988, 109-115. Overbeck/Mau 1884, 425 also give the correct function.

⁶⁸¹ The segments which were found in the 18th century are included in appendix 1, at the end of the collection of records from this century. Further examples were found on the following dates (cf. appendix 1): December 1828 (Casa di Aristide); 5-4-1869; 14-5-1869 (as part of the doors of a cupboard on the first floor of the Casa dello Scheletro); 17-3-1871; 21-2-1874; 10-4-1874; 27-7-1875 (probably in the *palaestra* of the forum baths). There are also several examples preserved in the Magazzino Archeologico whose exact find spots are not known: inv. E 2811 (1 example); inv. E 2812 (6 examples with 1 hole); inv. E 2853 (1 example of dark grey bone with carved rings, found July 1962 on the *Decumanus Maximus*). Wooden examples: 12-3-1873 (9 examples, probably found in *Insula* VII 1, room 2; in fact Notamento No. 26, no. 33/654 mentions only 8 of them!); 17 and 22-11-1939 (Casa dei Due Atri, part of a vanished cupboard). For Pompeii, see Fiorelli's *Pompeianarum Antiquitatum Historia* (1860 and 1862, *passim*) and, for example, a cupboard in house V 3a, found in June 1901, cf. NSc 1901, 302-303. For wooden examples outside Italy see Deonna 1938, 244 and pl. 78 no. 62 (from Delos).

⁶⁸² Cf. Pelletier 1971, 202.

⁶⁸³ Cf. Spano 1943, 272-277 and Mols/Moormann 1996, 25.

wooden core intact (see reconstruction drawing in fig. 29 G-L).⁶⁸⁴ From them we learn that the core was made of hard wood and was secured in the cylinders by small wedges of a softer wood at the ends (fig. 29 M-O). The core of the Vindonissa example is *Buxus sempervirens* L., held in place by wedge of *Abies alba* Mill. Each bone segment has such a wooden core, which has holes or pins at the ends to allow a number of segments to be linked into a band. These pins and holes served as turning points for the hinge. Hinge segments complete with wooden core were found in Herculaneum as early as 7 September 1861. Perhaps it was these which prompted Fiorelli's insight.

Besides the natural hole in the centre of the bone, which was filled with the wooden core, one or two further holes were bored through the wall of each segment, possibly with a spiral bit (fig. 29 A-B, E-F).⁶⁸⁵ Protruding wooden pins were inserted into these holes (fig. 29 P-Q),⁶⁸⁶ and then secured alternately into the door and the main body of the piece. Thus half the segments were fixed immovably to the piece, while the other half turned with the door (fig. 29 R-S). One can often see the circular marks of wear on the tops of bone cylinders.

The cylinders themselves are usually fashioned from the metatarsal bone of cattle, donkeys and horses: sometimes the metacarpal bone is used.⁶⁸⁷ Two types of segment are commonly found:

1. elements from 5 to 11 cm. high, decorated with two or three engraved lines running in parallel around the cylinder, with two or three holes drilled in the walls (fig. 29 A, C, E). The engraved lines were originally burned and then filled with wax mixed with carbon powder⁶⁸⁸ and would have stood out prettily, black against the white bone.
2. elements smaller than 5 cm., usually with one hole and without decoration (fig. 29 B, D, F).

The holes are bored either half way or right through the wall of the cylinder.

In the view of R. Pelletier (1971, 204), any given hinge would contain only one of the two types of segment.⁶⁸⁹ However, the hinge bands found in Herculaneum show that this was not the case. Here we find that cylinders of the second type are always closed off at the ends by a segment of the first type, as for example in the hinges in the *aedicula* of the Casa del Sacello di Legno (cat.no. 29, fig. 145 A-B). We see the same thing in the painting in the tomb of Vestorius Priscus in Pompeii and on a drawing of the lost plaster cast of a cupboard from Boscoreale, in which 34 small cylinders are closed off at the top and bottom by two large ones (see § 3.5.1).⁶⁹⁰ This pattern seems to be confirmed whenever large numbers of segments are found in one place. The smaller segments tend to greatly outnumber the larger.⁶⁹¹

Some examples suggest that wood and bone segments could be combined in one band. By placing them alternately a decorative effect was achieved, as can be seen in the painting in the tomb of Vestorius Priscus where the hinges are coloured white and brown. In Herculaneum we find the same thing in the doors of a piece which was photographed but has since been lost. This may perhaps be identified as a cupboard which is described at length in the excavation reports.⁶⁹²

⁶⁸⁴ The Vindonissa piece is published by Schmid (1968, 185-192) and is in the museum at Brugg, Inv. 23.1400. Delos: cf. Deonna 1938, 242. The wooden core is also caught in plaster in several segments from the casts of cupboards in the Casa di Iulius Polybius in Pompeii.

⁶⁸⁵ Cf. Fremersdorf 1940, 326-329.

⁶⁸⁶ Usually small wooden pins will have been used here; in one case vestiges of rust seem to point to an iron plug, cf. Von den Driesch/Boessneck 1982, 571 (from Pergamon). One segment from Pompeii has two extra small holes whose function is unknown, cf. Bonghi Jovino 1984, 343 and tav. 182, 12.

⁶⁸⁷ Cf. Von den Driesch/Boessneck 1982, 567 and 571.

⁶⁸⁸ This emerged from the analyses of vestiges of a black substance found in the decorative lines of several examples, published by Schmid (1968, 191).

⁶⁸⁹ See also Deonna 1938, 87, fig. 5 who only gives elements with engraved lines in his reconstruction.

⁶⁹⁰ The turned ornamental heads which Fremersdorf (1940, 328 and Abb. 13) interpreted as the final segments of hinge bands, should in our view be seen as something like needle-case tops.

⁶⁹¹ One example is Pompeii, V 2: 51 items, 8 of them large and 43 small, cf. NSc 1894, 314.

⁶⁹² Photo: Maiuri 1958, 22 fig. 27. For the description in the excavation reports, see appendix 1: 17-2-1928.

Hinges could thus be made of wood or bone. Bone seems to have been used primarily for its contrasting effect with the wood of the furniture. Bone segments (possibly alternating with wood) seem to come mainly from cupboards and *aediculae* where they were very visible, while in chests, where the lid hinged on the invisible back (as in cat.no. 41; figs. 167, 171), either purely wooden hinge bands or metal hinges were preferred. If such a rule is strictly applied, the presence of bone hinge segments can help us identify pieces which have decayed. They strongly suggest a cupboard or an *aedicula*, rather than a chest.

Hinge bands were already much in use during the Hellenistic period. This is apparent from their presence in a number of coffins, where light and dark segments are usually alternated.⁶⁹³ The mechanism is much older, however, and is even encountered in a wooden diptych with an ivory 'piano hinge' in three sections from the Ulu Burun shipwreck (14th/13th century B.C.). Examples of this sort of 'piano hinge' from the Archaic period are known from small chests from Samos.⁶⁹⁴ In Celtic hinges of this type, which were taken over from the Graeco-Roman world, the cylinders are richly decorated with geometric motifs, including concentric circles.⁶⁹⁵

4.7.3 Precious metals, glass, alabaster

In the towns around Vesuvius only bronze, iron, bone and ivory have been found in fittings for wooden furniture. Elsewhere, however, other materials are in evidence.⁶⁹⁶ Silver has already been mentioned as one of the materials with which bronze fittings were inlaid, as can be seen in the bed in the Casa del Tramezzo di Legno (cat.no. 11; fig. 35 G). The excavation reports refer to another bed found partially covered with silver leaf but unfortunately this piece has not survived.⁶⁹⁷ Gold as a decoration has not yet appeared. There was certainly gold leaf or paint on the supports of a rack in the *Schola Armaturarum* in Pompeii (III 3, 6), where according to the excavators there were vestiges of gold on the volutes of the carved capitals.⁶⁹⁸ Where the literary sources speak of gold and silver furniture, we should probably imagine wooden objects with appliquéés in these materials.⁶⁹⁹ Solid silver or gold furniture was of course extremely rare, but a solid silver table has been found in the Hildesheim silver treasure.⁷⁰⁰

Glass paste was possibly used as an alternative for ivory in the eyes of the human and animal figures featured in the decorative second element of table legs (see § 3.3). Although no examples

⁶⁹³ Cf. Watzinger 1905, 25-36, Nr. 1-4 (from Abusir), Nr. 8 (from Memphis), Nr. 10 (from Kertch); cf. Watzinger 1905, 70 and Abb. 27 and Brümmer 1985, 74 and 75 Abb. 24e and Anm. 283 (Athens, National Museum, inv. X 8001 and X 8002).

⁶⁹⁴ Dyptych: cf. Bass 1989, 10; Payton 1991, 101-106 and figs. 2-4 and table XVII and XVIII. Samos: cf. Kyrieleis 1980, 123-130, Kat. 28-30: in his Kat. 28 and 30 alternating light and dark wooden segments are used; Kat. 30 has two hinges producing a folding lid; for other examples cf. Kyrieleis 1983, 300-302 and Abb. 10-11 (here too alternating light and dark wooden segments are used). Ephesus: cf. Hogarth 1908, 197 nr. IX and pl. 39-41: the author could not yet identify them. This type of hinge has been reconstructed in wood with a much larger diameter (average 8.5 cm.) for temple doors in the Classical period: cf. Gruben 1982, 193-195 and Abb. 33 a/b and 34; Gruben (1982, 194, Anm. 49) also points to the description of a similar hinge in the building inscription of the large temple of Apollo on Delos. For literature on Roman hinge bands, cf. amongst others: Deonna 1934, passim; Fremersdorf 1940, passim; Davidson 1952, 128-129 nr. 865-866 (described as: 'bone furniture joint'); Schmid 1968; Pelletier 1971; Béal 1980; Von den Driesch/Boessneck 1982, 563-571; Prost/Prost 1983; Bonghi Jovino 1984; Carandini 1985 II 54; McGregor 1985, 203-205. Hinge segments are still not always recognised as such, as in: Wahl/Kokabi 1988, 277 d.

⁶⁹⁵ Cf. Jacobi 1974, 241-243; Grodde 1989, 399 Taf. 13.

⁶⁹⁶ The wooden components of furniture made largely from other materials is not dealt with here. Marble tables, for example, sometimes had wooden tops or wooden stretchers; for these see Moss 1988, 95-100.

⁶⁹⁷ See appendix 1: 18-12-1939, Casa dei Due Atri, room 3.

⁶⁹⁸ Cf. NSc 1916, 439 and fig. 6.

⁶⁹⁹ Apul., Met. 2.19; id. 10.34; Curt. 8.8.9; Dig. (Scaevola) 33.7.20.8; Dig. (Celsus) 33.10.7.1; Dig. (Papinianus) 33.10.9.1; Dig. (Ulpianus) 34.2.19.8; Iuv. 6.594; id. 11.128; Pl., St. 377: *lectos ... auratos* (beds with gold fittings); Plin., Nat. 33.144 and 146; Sen., Ep. 17.12; id. 110.12; Suet., Iul. 49.7; Suet., Cal. 32; V.Max. 1.1.ext.3. Gilded silver appliquéés for *fulcra* are preserved on loan in Basle (private collection, Switzerland): cf. Faust 1989, 218, Kat. 457, cf. also Neugebauer/Greifenhagen 1932, 43 and Abb. VII 1.

⁷⁰⁰ Berlin, Staatliche Museen, Antikensammlung, Inv. 3779.57, cf. Gehrig 1967, 21-22. There is one unmistakably clear reference in the written sources to solid silver beds: SHA (Lampridius), Heliogabalus 20.4: *Hic solido argento factos habuit lectos, et tricliniales et cubiculares*. (This man had beds made from solid silver, both for *triclinia* and for *cubicula*.).

of wooden tables with glass paste inlay are known, the material does appear in marble tables.⁷⁰¹ Decorating furniture with precious stones must have been very expensive, as the written sources confirm.⁷⁰² Faust (1989, 145) gives examples from a group of terracotta appliques for *fulcra*, found in the area to the south of the Lago Maggiore and to the west of Pavia. Plaster was sometimes applied to wood as a background for painting, as in one of the Herculaneum *aediculae* (cat.no. 27; fig. 137). We also find this old Egyptian technique in Roman coffins from Kertch.⁷⁰³

We should mention alabaster as a material for turned bed-legs, although it is very unusual. Four examples have been found in a grave in Bolsena.⁷⁰⁴ Because the material itself is too soft and too weak to support a bed, a vertical iron rod running through the alabaster provided the necessary strength.

Finally there is veneer work executed in materials other than wood. We know from the written sources that ivory, bone and tortoise-shell were used for this purpose,⁷⁰⁵ but producing veneer in such materials was (and remains) particularly expensive.

4.8. Reconstruction of the working process

With the data now assembled it is possible to broadly picture a working process which will not have changed much between the late Roman period and the Industrial Revolution. First of all the timber was carefully selected for the job in hand, the choice undoubtedly determined by the form and/or function of the piece which was to be made. In Herculaneum the choice usually fell upon the wood of the silver fir, but for particular applications the cabinetmaker would select other types of timber. One or more trees were then sawn up into appropriate sizes. The cabinetmaker had various saws at his disposal for this task. It is not known how long the wood was allowed to season and settle before it was used, but we can assume that it was done properly because warping or shrinkage of the wooden elements is not found in any of the Herculaneum furniture. Planes (or adze-planes) were used to smooth off flat surfaces. Moulding planes gave mouldings the desired profile: good examples are the cornices in the pediments of *aediculae* and the mouldings surrounding door panels.⁷⁰⁶ It is almost certain that cabinetmakers were using a kind of mitre-box for mitring corners at this period, although no such implement has yet been found. Details were modelled with very fine tools, including adzes, chisels, gouges and knives. Holes for joints were first drilled and then finished with mallet and chisel. For all these tasks, work benches must have been available. Bed legs could not have been turned without a lathe.

The different elements were fitted together using a wide range of measuring implements. Vertical elements were positioned with a plumb line, and horizontal elements with a *libella*. Short lengths were measured with a rule or with compasses, longer lengths probably with a line. Compasses were also used to mark out circles and setsquares to produce corners at various angles.

The prepared surfaces were polished with rasps, files or fish-skin, after which the separate elements of a piece were fixed together, usually with glue. Functional fittings were available in a

⁷⁰¹ Cf. Moss 1988, 86-88.

⁷⁰² Cf. Dig. (Paulus) 33.10.3.3; Luc. 10.122: *fulget gemma toris et iaspide fulva supellex* (precious stones glitter on the beds and the household furniture is tawny with jasper); Mart. 12.66.5-7; Plin., Nat. 36.59; Sen., Ep. 110.12: *gemmeam supellectilem* (household furniture embellished with gems); Sidonius Apollinaris, Carmina 17.5. A large quantity of precious stones, which originally decorated a wooden ceiling and/or furniture, have been found on the Esquiline in Rome, on the site of the present Villa Palombara, cf. Cima 1986, 105-122 and Cima di Puolo 1990, 46-48.

⁷⁰³ Cf. Vulina/Wasowicz 1974, especially 106-134; Pinelli/Wasowicz 1986, passim.

⁷⁰⁴ Cf. Sordini 1893, 64-68, taken after discovery to the Museo Etrusco Centrale in Florence.

⁷⁰⁵ Ivory: Dig. 32.52.7. Bone: Plin., Nat. 8.7. Tortoiseshell: Apul., Met. 10.34; Dig. 32.1.100.4; Iuv. 6.80-81; Mart. 9.59.7-10; Plin., Nat. 9.39, 16.233 and 36.59; Var., L. 9.46-47; Var., Men. 448; Var. ap. Non. p. 86 M. According to Pliny (Nat. 9.139) it was too much of a good thing if this material came to be painted.

⁷⁰⁶ Cf. Koeppen/Breuer 1904, 177 Abb. 248.

variety of materials and the piece could be decorated with appliqué, inlay, veneer or painting.

4.9 Organisation of the trade

So far archaeology has unearthed very little material which throws light on the organisation of Roman cabinetmakers' associations. Our knowledge of the subject is thus largely based on the literary and epigraphical sources, which give an impression of far-reaching differentiation based on specialization within the woodworking trade.⁷⁰⁷ Amongst cabinetmakers, the sources allow us to distinguish between various types of craftsman. Most of them derive their name from the product they produced, for example chests (*arc(ul)arius*), cupboards, (*armariarius*), beds (*lect(u)arius* or *grabatarius*), chairs (*sess(oriarius)*) and stools (*sellularius*). Only one group owes its name to a material and this was the costly citrus wood (*citrarius*). Such craftsmen are usually mentioned in combination with the ivory-worker (*eborarius*). We also encounter the terms *tign(u)arius*, *lignarius* and *intestinarius*, the first two probably being more general terms for a carpenter or woodworker, the last perhaps a cabinetmaker. All these forms are adjectives, and always require the noun *faber* (craftsman), as is sometimes explicitly pointed out in the sources.⁷⁰⁸

The assumption of extensive specialization is largely based on source material from Rome itself. Here, like so many other craftsmen, the woodworkers were concentrated in a particular street or area. In Livy we read that the 'woodworkers street' lay outside the *Porta Trigemina*, that is to say somewhere between the Aventine and the Tiber.⁷⁰⁹ The *eborarii* and the *citrarii* can perhaps be located in Trastevere.⁷¹⁰ In 1937, next to the church of S. Omobono, three inscriptions were found which refer to the *collegium* for woodworkers in Rome.⁷¹¹ Various authors have made a link between these inscriptions and a relief with depictions of woodworkers (see § 4.6.1) which was found in the near vicinity. This is thought to be part of an altar set up by the woodworkers in honour of their patroness, the goddess Minerva.⁷¹² A further inscription with a bearing upon this 'association' is a marble plate with names, now in the Capella del Crocifisso of the church of S. Prassede in Rome.⁷¹³ We should probably imagine this *collegium* not as a modern trade union devoted to better working conditions or training, but more as an association of craftsmen with a mainly social character, linked to a cult and with a funerary function.⁷¹⁴ This

⁷⁰⁷ Cf. Zimmer 1982, 31.

⁷⁰⁸ Cf. Von Petrikovits 1981, 85-113; Zimmer 1982, 31 Anm. 211. Kornemann (1909, 1888-1925) considers all craftsmen who work in hard materials as *fabri*; cf. also Von Petrikovits 1981, 64. The *faber tign(u)arius* he equates with a carpenter, while the *faber intestinarius* is more a cabinetmaker. He deals with wood-workers in column 1893-1899 and he gives many written sources. In column 1897-1899 he specifically examines the cabinetmakers. Sources referring to the various craftsmen in the furniture trade are: *arcularius*: Pl., Aul. 519; CIL VI 6701; *armariarius*: CIL XII 4463; *lect(u)arius*: CIL VI 7882, 7988 and 9503; Gloss. 2.350.60 and 3.308.26; *grabatarius*: Lucil. 251; Gloss. 3.367.28; *sess(oriarius)*: CIL XII 3346; *sellularius*: Apul., Flor. 15; Tac., Hist. 3.84; *citrarius*: CIL VI 9258; *tign(u)arius*: Cic., Brut. 257; CIL XIII 8346; cf. Von Petrikovits 1981, 116-117; *lignarius*: Liv. 35.41.10; Palladius, de Agricultura 1.6.2; Vulgata, Isaias 44.13; *intestinarius*: CIL VI 8173.3, X 1922; Codex Theodosianus 13.4.2; Var., R. 3.1.10. Cf. Von Petrikovits 1981, 85-113 and 122; id. 1981A. There are sometimes doubts about whether the term '*eborarius*' indicates craftsmen or merchants, as for example in Von Petrokovits (1981, 108 and 112).

⁷⁰⁹ Liv. 35.41.10: ... *et iidem porticum extra portam Trigemina inter lignarios fecerunt* (and the same people have built a portico outside the Trigemina gate in the wood-workers street.).

⁷¹⁰ CIL VI 33885.4. Cf. Gradenwitz 1890, 72-83; Burford 1972, 160; Morel 1987, 131.

⁷¹¹ Cf. Ambrosini 1939, 85, 94 and 97.

⁷¹² Colini 1947; Castagnoli 1979, 149; Schürmann 1985, 59.

⁷¹³ Cf. Pietrangeli 1939, 101-105.

⁷¹⁴ Cf. De Robertis 1972, 8 and 9, 73, 208 nota 33; Garnsey/Saller 1987, 156-158: 'mutual aid societies' and 201: 'social clubs'; Jongman 1988, 172: 'Modern consensus seems to be that ancient *collegia* were social rather than economic organizations.' For the organization of *collegia* see also, Hermann 1978, 113-114. In contrast to the later guild, a *collegium* was not a legal entity and did not regulate its members' products.

sort of *collegium* is known from other Italian towns.⁷¹⁵ Although no evidence of such a grouping has been found in Herculaneum, an inscription in neighbouring Pompeii mentions an association of *fabri lignarii* who are supporting the candidature of one C. Cuspius Pansa.⁷¹⁶ One can assume by extension that a similar association existed in Herculaneum.

So far no carpentry workshop has come to light in Herculaneum, whereas in Pompeii several sites have been identified with woodworkers.⁷¹⁷ On the basis of the fine furniture found in the Casa del Fabbro (I 10, 7) O. Elia (1934, 292) argued that this was the workshop of a *faber arcarius*. On the other hand the large amount of bronze found there convinced B. Gralfs (1988, 52) that it was a metal-worker's workshop. Perhaps it was a cabinetmaker's workshop and the metal was for fittings which had yet to be mounted on the wooden furniture. Yet even if this is the case, it is not in our view possible to identify such a cabinetmaker as a *faber arcarius*; the epigraphical material does not suggest such a specialized function in Pompeii. Indeed, it is unwise to assume the same level of specialization here as in Rome.

As far as Pompeii is concerned, Gralfs (1988, *passim*) has shown that many bronze components for furniture were produced locally, rather than in Capua as was previously thought. One of her arguments is that 26% of the tools found in the town were for working metal. Because an even greater proportion (38%) were for working wood, we can confidently assume that furniture too was produced locally. Again, we can probably safely conclude that woodworking in Pompeii was organized in the same way as the metalworking, which seems to have been concentrated in small workshops with a few workmen and little specialization.⁷¹⁸ The same probably applies to Herculaneum. Even though, as has been said, no cabinetmakers workshop and no epigraphical material relating to woodworking have yet come to light here,⁷¹⁹ the consistent use of the same wood throughout the excavated area points to local production. The advanced techniques which we have observed in the furniture indicates that there must have been professional workshops in the town. However, the lack of any evidence pointing to serial production and the amount of variation found in the surviving furniture each suggest small workshops concentrating on the local market.⁷²⁰

4.10 Conclusion

It is clear that the Romans took over a large part of their technical knowledge from the Greeks. According to Von Petrikovits (1981, 68), Greek influence came from *Magna Graecia* and from the Hellenistic East, and was at its strongest in the period 350-200 B.C., long before the Herculaneum furniture was made. The Romans refined their cabinetmaking techniques by combining the knowledge which was already present on the Apennine peninsula with methods and

⁷¹⁵ On the *collegium fabrum tign(u)ariorum* see also Kornemann 1909, 1893-1896 and 1905-1918, who gives sources for this association in a number of towns in Italy, including Rome, Ostia, Tusculum and Velitrae.

⁷¹⁶ CIL IV 960: *Cuspium Pansam aed. lignari universi rog* (The united wood-workers demand Cuspius Pansa for the post of *aedilis*.); see also CIL IV 951. For the Pompeian wood-workers see also Gaitzsch 1980, 333 Anm. 555.

⁷¹⁷ VI 7, 8-11: cf. Fröhlich 1991, 319-320 (with bibliography); VII 1, 12-13: cf. Mustilli 1950, 219; Van der Poel 1983, 270. IX 1, 14: cf. Van der Poel 1983, 313. La Torre 1988, 85 and 98 nota 99, mentions four other workshops for wood-workers, namely I 7, 7; VI 7, 10; VI 14, 37 and IX 8, 5. The workshop of an *eborarius* was possibly situated at VII 7, 11, cf. Fiorelli 1873, 37; Gassner 1986, 37; La Torre 1988, nota 105.

⁷¹⁸ Regarding the metal-workers Gralfs (1988, 107) concludes: 'Die in Pompeji vorherrschende Betriebsform war die kleine Werkstatt mit wenigen Arbeitskräften, selten vorhandener Spezialisierung und Arbeitsteilung, sowie geringer Produktivität.' For specialization, see Von Petrikovits 1981, 79. Cf. also: Jongman 1988, 59 and 186.

⁷¹⁹ Judgements on the economic and social status of wood-workers and on their relationship to their customers are not generally possible, therefore.

⁷²⁰ Eames (1977, 238) describes a similar state of affairs in medieval furniture workshops. The great variety here points to small groups of workmen in workshops which were not rigidly tied to standard solutions. As a result their work displays a wealth of invention and a high degree of individuality.

techniques borrowed from elsewhere. To all this they added their own skill and experience and ultimately were able to bring the craft to such perfection that its techniques did not undergo any profound change until the Industrial Revolution, when mechanical woodworking techniques were introduced. Indeed, the modern cabinetmaker still uses many techniques and tools which are virtually identical to those used by the Romans.

The analysis of wood samples from furniture in Herculaneum has revealed that conventional assumptions about the wood used in Roman furniture, based as they were on antique texts alone, require substantial modification. Although the written sources mostly mention costly woods in combination with expensive furniture, it turns out that the majority of the Herculaneum pieces were made from silver fir, with hard woods only being used for special applications. The silver fir was probably locally available in large quantities. Moreover, several of the woods found in Herculaneum are not mentioned at all in the antique texts in relation to furniture. This shows how dangerous it is to draw conclusions in this field based purely on the written sources. One can reasonably assume that local timber was also used for household furniture elsewhere, with suitable woods brought in as required for special applications like turning, carving and veneer work.

The Herculaneum furniture represents a considerable technical advance on the products of Greek cabinetmakers. This is apparent, for example, in the diversity of its woodwork joints. In the absence of convincing arguments to the contrary, it is quite reasonable to assume that the picture presented by Herculaneum (whose survival, after all, is entirely a matter of chance), very far from being an exceptional case, is in fact representative of the level of expertise prevailing in Roman furniture workshops at the time.

Alas, the Herculaneum furniture tells us little about the workshops in the town. In view of the widespread use of *Abies alba*, the locally available timber, it is probable that these still lie buried under the lava. The size of the town and the relatively large amount of furniture per household each suggest that a number of workshops would have been active, while examination of the furniture itself seems to tell us that such workshops would have been on a small scale, producing the furniture required for the local market.

CHAPTER 5

FUNCTION

5.1 Introduction

Furniture is used for fundamental human activities such as eating, working and resting. We thus encounter many similarities between current usage and the use of tables, seating, beds etc. in the past. The task of a functional analysis, however, is to highlight difference as well as similarity. In the Roman context this mainly involves the use of couches in situations where chairs would now be found, but it also covers the use of chests for storage and the function of pieces such as *aediculae* for which there is no contemporary equivalent.

Research into furniture from antiquity has tended to focus on the chronology, typology, style, technique and iconography of the subject. Factors relating to the original location or specific function have not, so far, received much attention. Pieces have generally been studied in themselves, rather than as parts of a greater whole. It has also been generally forgotten that where the Romans adopted forms of furniture from other cultures (from Egypt, Greece or Etruria, for example) they placed such pieces in their own social and cultural milieu.⁷²¹

Virtually all the wooden furniture we know of from Herculaneum, whether in the original or via descriptions, came from private houses or shops. The only exceptions are a bed and a table found in the Collegio degli Augustali (cat.nos. 10 and 17), but even here, where a public or semi-public building is concerned, the relevant room is similar to a bed-cum-dining room in an ordinary house.

Thus in order to place the Herculaneum furniture in context, we first need to form a picture of the activities which took place in the Roman house. We know from the remarks of writers like Vitruvius and Petronius that the decoration of a room was linked to its function.⁷²² In the larger Roman houses (where the space available allowed each room to be used for a single activity) the architecture and the decoration of the floors, walls and ceilings often give a clear indication of the function of rooms.⁷²³ In smaller households, on the other hand, it is much more difficult to draw any conclusion on the use of rooms purely on this basis. Here the rooms were usually used for more than one activity and their disposition and decoration do not reflect any one function. However, the use of a room can sometimes be established on the basis of finds. In Herculaneum a relatively large number of rooms (and even several complete houses) were found with their entire contents, enabling us to make a functional analysis which embraces all the features of a room. These include not only the furnishings and appointments, but also architectural and decorative elements and the location of the room within the house. Literary sources can help us to discover the function of certain rooms, of course, since they commentate upon social life.⁷²⁴ Yet simply to dub a room with a name taken from the antique sources is unsatisfactory, since the name does not always give a full picture of what took place in the room.⁷²⁵ Several recent studies which examine the interaction between architecture and the use of space are of interest here. They include J. Clarke's (1991) work on the decorative ensembles of seventeen houses dating from between 100 B.C. and 250 A.D., and the collection of essays edited by S. Kent (1990) which arose out of the 'Domestic Architecture and the Use

⁷²¹ Cf. Gazda 1991, 2-6.

⁷²² Cf. Thébert 1985, 381.

⁷²³ Cf. amongst others Corlàita Scagliarini 1974-1976, 17; Wallace-Hadrill 1988, 50; Clarke 1991, XXIV.

⁷²⁴ Cf. Wallace-Hadrill 1988, 48-49.

⁷²⁵ Cf. Wallace-Hadrill 1988, 48: '... the sources, notably Vitruvius, have been ransacked for labels, as if to designate an area a triclinium or oecus or exedra or diaeta was to explain it.' Cf. Allison 1992, 235.

of Space' conference.

In this chapter the focus is on the function of the wooden furniture from Herculaneum. We first examine the Roman household to gain an impression of daily domestic activity (§ 5.2). The internal division of the Roman house is then discussed (§ 5.3). Taking a passage from Vitruvius, we look at the types of room which can be distinguished in Roman houses. Even though Vitruvius (and other Roman writers) concentrates almost exclusively on the rooms found in *atrium* and *atrium-peristylum* type houses, he still provides a useful insight into the functioning of Roman houses in general. We next examine the specific character of Herculaneum (§ 5.4) and then turn (§ 5.5) to the furniture found in the town. As before, we follow the sequence of beds, tables, seating and storage furniture. We look first at the find context of the individual pieces and use it to draw conclusions about their respective functions. We then ask what the pieces themselves can tell us about the activities which took place in a particular room. We end by formulating functional categories linked to specific forms of furniture (sleeping, eating, working) and use them to draw more general conclusions about the function of the furniture and rooms in Herculaneum which may have a wider application (§ 5.6-5.7).

5.2 The Roman household

The *domus* (household), in the sense it had acquired by the time of the Principate, meant much more than just the 'nuclear family' of father, mother and children. The term could cover quite a large group of kinsmen and even include the slaves.⁷²⁶ In this study we understand the household as the community resident in a house or apartment, slaves included.⁷²⁷ It is clear from the literary sources that very large numbers of slaves could be owned by the higher social classes. Their tasks were highly differentiated: there was often a kind of major domo (*dispensator*), a gatekeeper (*ianitor*) and cleaners (*atrienses*).⁷²⁸ Obviously, the lower one was on the social ladder, the fewer slaves one could afford and the less differentiated their tasks. Yet it is striking that even at the lowest levels of society the possession of slaves was not uncommon (Rawson 1986, 12). While we might experience the presence of slaves as an intrusion on our privacy, this was clearly not true of the Romans.⁷²⁹ In the large houses of the higher classes it was of course possible to concentrate the service rooms beyond the sight of visitors,⁷³⁰ but in poorer households service rooms and living rooms were necessarily confined within a small area.

Frequent contact with people from outside the household was of vital importance in Roman society. These relationships were based on the exchange of favours and services and the form they took was determined by the social status of those involved. P. Garnsey and R.P. Saller (1987, 148-154) distinguish three categories of 'exchange relationships': between patrons and clients, between friends of different social status and between friends of equal social status.⁷³¹

The house itself played an important role in defining these relationships,⁷³² which therefore

⁷²⁶ Saller 1984, 339: 'Domus was used with regard to household and kinship to mean the physical house, the household including family and slaves, the broad kinship group including *agnates* and *cognates*, ancestors and descendants, and the patrimony'; cf. id. 342; Thébert 1985, 395; Rawson 1986, 7; Garnsey/Saller 1987, 128.

⁷²⁷ There is no evidence that Roman households contained different nuclear families. Adult sons almost never lived with their fathers. According to Garnsey and Saller (1987, 129) this was true at all levels of the population.

⁷²⁸ Cf. Garnsey/Saller 1987, 122; Stambaugh 1989, 158-159.

⁷²⁹ Cf. Wallace-Hadrill 1988, 81; Stambaugh 1989, 165; for Roman Egypt see Hobson 1985, 212.

⁷³⁰ According to Wallace-Hadrill (1988, 81) this was 'to render low-status areas invisible to the visitor.'

⁷³¹ See also Garnsey/Saller 1987, 148-149; Saller 1990, 49.

⁷³² Wallace-Hadrill (1988, 46): 'The close nexus between housing and social standing is only comprehensible in the light of the peculiar nature of Roman public life.'

had a direct influence on the differentiation of space within the building.⁷³³ The possession of a fine house was of vital importance to the higher social classes, since a wide range of public activity took place there. This included the reception of clients (*salutatio*) and the reception of friends, possibly with meals.⁷³⁴ A *patronus* derived his honour and prestige from his *domus*.⁷³⁵ It was the very embodiment of status.⁷³⁶

We learn from symbolic anthropology that there is a social meaning behind the way in which domestic space is divided. Differences in age, sex and rank can be expressed in the disposition and arrangement of rooms. M. Douglas (1972, 514) has pointed out the dangers of attempting to deduce these symbolic distinctions solely on the basis of the material remains, but it must be possible to gain at least some idea of the social significance of domestic space from archaeological finds when we also have literary sources to turn to. The relevant distinctions here are sex, age and social rank. In marked contrast to classical Greece (Walker 1983), there is virtually no allocation of rooms specific to men, women or children in Roman houses.⁷³⁷ The reason for this is that age and sex played only a minor role in comparison with the overwhelmingly dominant factor, status.⁷³⁸ High social status required one to be free-born and to have held political office.⁷³⁹ Thereafter it was largely dependent on wealth, which one displayed via high expenditure inside the house, and via one's role in public life outside it.⁷⁴⁰ Thus the division of domestic space was not in the first instance based on personal needs, but proceeded from the social position of the occupants.⁷⁴¹ Personal preferences were expressed only in architectural and decorative details. A. Wallace-Hadrill (1988, 43-44) points out that Petronius, in his description of Trimalchio's house, reveals the use of the space and the accessibility of rooms to different people by means of a sequence of clues given in the domestic architecture and decoration. The Romans were thoroughly aware of such things and although we are not able to interpret every detail, it is still possible to learn more about them by reading the signs they left behind.⁷⁴²

5.3 The internal division of the Roman house

The architecture of the Roman house can be understood as an arrangement of rooms based on the activities which were to take place in them.⁷⁴³ Put another way, we can regard the house as a framework for various activities. It is then possible, by combining literary and archaeological evidence, to produce a picture of the way it was used both by the inhabitants and by outsiders.

The most important passage bearing upon the internal division of a Roman house is to be

⁷³³ Cf. Wallace-Hadrill 1988, 55.

⁷³⁴ Cf. Saller 1990, 57: 'The *salutatio* provided a visible marker of status in two ways: the setting of the callers was indicated by the order in which they were received by the patron, and the patron's statement was displayed by the number and importance of his callers.'

⁷³⁵ Cf. Saller 1984, 352 and Garnsey/Saller 1987, 122.

⁷³⁶ Saller 1984, 349.

⁷³⁷ For 'functional research' into typical Greek living arrangements (Morgantina), see Tsakirgis 1988, *passim*, esp. 374-418. A theoretical basis is absent here, however.

⁷³⁸ Cf. Garnsey/Saller 1987, 122; Wallace-Hadrill 1988, 52. Dwyer 1991, 34: 'Classical refinements in plan and decoration, unjustified on the grounds of utility alone, serve as no more than suitable expressions of the worth (*dignitas*), credibility (*auctoritas*), and power (*potestas*) of the dominus.'

⁷³⁹ Cf. Jongman 1988, 208.

⁷⁴⁰ Cf. Garnsey/Saller 1987, 121-122.

⁷⁴¹ Thébert 1985, 306 and 372.

⁷⁴² Sanders 1990, 46-47: 'The interior details of the house reflect the personal values of the occupant family, but the generalities and the behavioral cues of the architectural organization and forms reflect broader cultural conventions.'

⁷⁴³ For the function of *atrium* houses, see Dwyer 1991, *passim*.

found in Vitruvius (6.5.1-3):

(1) When the rooms have thus been laid out with regard to the direction of the winds, one should then consider how, in private building, those rooms which are intended exclusively for the masters of the house should be built, as well as those which are shared with people from outside the household. Because in those which belong exclusively to the masters the possibility of entering is not open to everybody but only to those who are invited. This applies for example to *cubicula* (bedrooms), *triclinia* (dining rooms), *balneae* (baths) and other rooms which serve a similar function. However, rooms which uninited people from the general population can enter by virtue of their personal right are communal, and these are *vestibula* (entrance halls), courtyards, *peristylia* and all rooms of similar use. People of modest wealth have therefore no need of a beautiful *vestibula*, nor *tablina*, nor *atria*, because their affairs are conducted by visiting others rather than by others visiting them.

(2) Stalls and shops should be set up in the *vestibula* of those who devote themselves to the produce of the land, and their houses should contain cellars, granaries, storerooms and the like, which are there more for storing the harvest than for their elegant appearance. Likewise, bankers and tax farmers should have rooms which are more becoming and impressive, and secured against theft. But servants of the law and orators should have more elegant and spacious rooms for receiving companies of people; for nobles however, who must fulfil their duties towards the citizens as honorary officers and magistrates, high and princely vestibules should be built, with *atria* and *peristylia* on a very large scale, and wooded gardens should be laid out with broad footpaths, designed to exude dignity: moreover there should be libraries, *pinacothecae* and basilicas, laid out not unlike grand public works, because political consultations and jurisdiction in both private and business affairs are commonly conducted in their houses.

(3) If therefore the rooms have been disposed within the building in accordance with the status of those involved, as laid down in the first book on *decor*, then no fault can be found with them; they will then be suitable for all activities and impeccably executed. These building prescriptions not only apply in town, but also in the country, except that in town *atria* should be located close to the doors and in the country, in buildings in the urban style, *peristylia* come first and then the *atria*, surrounded by a paved *porticus* looking out on *palaestrae* and footpaths.⁷⁴⁴

⁷⁴⁴ Vitruvius 6.5.1-3: 1. Cum ad regiones caeli ita ea fuerint disposita, tunc etiam animadvertendum est, quibus rationibus privatis aedificiis propria loca patribus familiarum et quemadmodum communia cum extraneis aedificari debeant. Namque ex his quae propria sunt, in ea non est potestas omnibus introeundi nisi invitatis, quemadmodum sunt cubicula, triclinia, balneae ceteraque, quae easdem habent usus rationes. Communia autem sunt, quibus etiam invocati suo iure de populo possunt venire, id est vestibula, cava aedium, peristylia, quaeque eundem habere possunt usum. Igitur iis, quae communi sunt fortuna, non necessaria magnifica vestibula, nec tabulina neque atria, quod aliis officia praestant ambiundo neque ab aliis ambiuntur. 2. Qui autem fructibus rusticis serviunt, in eorum vestibulis stabula, tabernae, in aedibus cryptae, horrea, apothecae ceteraque, quae ad fructus servandos magis quam ad elegantiae decorem possunt esse, ita sunt facienda. Item feneratoribus et publicanis commodiora et speciosiora et ab insidiis tuta, forensibus autem et disertis elegantiora et spatiosiora ad conventus excipiundos, nobiles vero, qui honores magistratusque gerundo praestare debent officia civibus, faciunda sunt vestibula regalia alta, atria et peristylia amplissima, silvae ambulationesque laxiores ad decorem maiestatis perfectae; praeterea bibliothecas, pinacothecas, basilicas non dissimili modo quam publicorum opera magnificentia comparatas, quod in domibus eorum saepius et publica consilia et privata iudicia arbitriaque conficiuntur. 3. Ergo si his rationibus ad singulorum generum personas, uti in libro primo de decore est scriptum, ita disposita erunt aedificia, non erit quod reprehendatur; habebunt enim ad omnes res commodas et emendatas explicationes. Earum autem rerum non solum erunt in urbe aedificiorum rationes, sed etiam ruri, praeterquam quod in urbe atria proxima ianuas solent esse, ruri ab pseudourbanis statim peristylia, deinde tunc atria habentia circum porticus pavimentatas spectantes ad palaestras et ambulationes.

According to Vitruvius, the division of space is primarily determined by the social status of the chief occupant.⁷⁴⁵ The house is divided into rooms to which only the invited had access, and rooms which were accessible to the uninvited as well. The distinction he employs is *propria* : *communia*, which is often interpreted as private : public. If Vitruvius' text is strictly adhered to, then Roman houses would have to be divided into rooms with a purely public and those with a purely private function. However, this would give much too crude an impression of the division of space in actual houses.⁷⁴⁶

Firstly, the true boundary between public and private does not lie within the building at all, but rather at the door or threshold of the house. This was regarded as the domain of the oldest Italian deity, Janus, the protector of the transition from outer to inner.⁷⁴⁷ In large houses this threshold was guarded by a gatekeeper, the *ianitor*, whose presence also emphasized one's importance. Not everybody was free to enter the house at any moment (any more than they were the rooms which Vitruvius denotes with the term '*communia*'). There is thus a distinction to be made between 'outer public' and 'inner public', in which the latter is clearly less public than the former. One might also describe this as 'public vis-à-vis the town' and 'public within the house'. The boundary between town and house was further underlined by the relatively closed face which the Roman house presented to the street. There were few windows and doors installed in the outer walls.⁷⁴⁸

Inside the house the accessibility of certain rooms to outsiders could vary. Access was linked, amongst other things, to the time of day associated with specific activities. It was further affected by the extent to which these rooms could be closed off with doors and curtains.⁷⁴⁹

Another qualification can be made to Vitruvius' account, this time concerning two rooms to which he gave equal status. At the *salutatio*, which took place in the morning, the *clientes* were admitted to the *atrium*. The *patronus* received them (it is generally assumed) in the *tablinum*. This seems to suggest that people could only enter this second room with an invitation, making it already less 'publicly accessible' than the *atrium*. This was even more true of the *peristylum* which lay beyond. To this clients had no access, invitations being restricted to friends and acquaintances. This implies gradations in the 'inner public' spaces. It is therefore unwise to draw too strict a distinction between public and private from the Vitruvius passage. There were undoubtedly clear gradations of privacy in the Roman world.⁷⁵⁰

Vitruvius clearly implies that the possession of rooms which he described as *communia* was dependent on the social status and wealth of the *patronus*. If we are thinking of a wider social span it might therefore be useful to reformulate his distinction 'public : private' in terms of 'formal : residential'. Yet here again there are difficulties, since there is no clear division between formal and residential rooms, but rather a kind of a sliding scale between the two.

⁷⁴⁵ Cf. Wallace-Hadrill 1988, 63.

⁷⁴⁶ Stambaugh (1989, 164) regards the transition from public to private as a continuous line visible from the street running via the door, *fauces*, *atrium* and *tablinum* to the garden. He sees the *domus* as very accessible since the door was always open and people had an uninterrupted view through the house from the front to the back. However, it is not at all certain that the door always stood open, nor (which is even more important) that visual accessibility meant that rooms could actually be entered. Moreover, we do not know the extent to which curtains were used to separate rooms from each other. This said, the relative openness does indicate an attitude towards privacy quite different from that which currently prevails (cf. Wallace-Hadrill 1988, 82-83). Clarke (1991, 1-2) regards the Roman house as the setting for the social, political and business activities of the owner, and thus as not private.

⁷⁴⁷ Lacey 1986, 129-130; Orr 1978, 1562; Thébert 1985, 339-340.

⁷⁴⁸ This stands in marked contrast to the 'openness' to nature within the house, a phenomenon adopted from Hellenistic rustic life, combined with elements taken from Hellenistic public buildings and palace architecture (Zanker 1979, 463). According to Veyne (1985, 304) the grandeur which was being imitated was not that of Hellenistic palaces but that of the theatre.

⁷⁴⁹ See also Thébert 1985, 375-377.

⁷⁵⁰ Cf. Wallace-Hadrill 1988, 58 and 81.

Perhaps it is better to speak of an arrangement in grades of intimacy.⁷⁵¹ We would then consider the least intimate room in the house to be the *atrium* (to which all those admitted to the house had access), and the most intimate the bedrooms of the members of the household (to which only a limited group of invited people had access at specific times of day). The final form of the house depended on how many grades of intimacy the owner wished to have differentiated.⁷⁵² In *atrium* and *atrium-peristylum* houses, the accessibility or intimacy of the various rooms was further underlined by the architecture and the interior decoration.⁷⁵³

As the Vitruvius text demonstrates, the written sources are clearly very important in helping us to determine the function of rooms. However, we should be aware that they refer almost entirely to houses belonging to the elite. Only in the largest houses did the scale of the building allow rooms with a single function.⁷⁵⁴ The written sources have too often been used in the past to interpret the function of rooms in all houses. Yet Vitruvius' remarks are relevant only to the very largest houses so far found in Pompeii and Herculaneum, and then only in part. They certainly do not relate to the homes of the lower orders.⁷⁵⁵ He refers to the houses of the less well-off only in negative terms: that formal, public space and a fine appearance are superfluous to them. The archaeological sources, by contrast, provide information about all levels of the population. How can we use them to gain insight into the functioning of houses which were not owned by the elite?

To answer this question we first need to know whether there were features common to all types of house, and follow D. Corlàita Scagliarini (1974-1976, 17) in dividing the rooms in all Roman houses into those which she called 'static' and those she called 'dynamic'. The static rooms are those which are really lived in, built and appointed for a long stay. They closely resemble each other in every type of house.⁷⁵⁶ The dynamic rooms (in smaller Roman houses) are largely passage and linking spaces, and generally have a simple wall decoration without a dominating central panel. Interim forms (part static, part dynamic) sometimes occur.⁷⁵⁷ Resemblances and differences in the appointment of rooms appear to stem from the tension between the desire to belong to a recognizable group and the desire to remain distinct. People define their position in society by giving a specific 'social colour' to their interiors, but when this position is established there are countless possible variations within it.⁷⁵⁸ All Roman houses can therefore be seen, in their architecture, decoration and furnishings, as confirming the status of their occupants.

⁷⁵¹ Douglas 1972, 516; Wallace-Hadrill 1988, 58-59.

⁷⁵² Cf. Wallace-Hadrill 1988, 54. On p. 58 Wallace-Hadrill also points to the sliding scale between public and private.

⁷⁵³ Wallace-Hadrill 1988, 77-78.

⁷⁵⁴ Cf. Clarke 1991, 5.

⁷⁵⁵ Contra Wallace-Hadrill 1988, 48. See also Tybout 1989, 358; Jongman 1988, 239: 'Although the amount of money spent on a house is not necessarily directly proportional to a person's wealth, some relationship cannot be denied. It is an expensive item in the family budget. For an expensive house a considerable amount of wealth would be necessary. And some alternative spending patterns at least presuppose an appropriate house. Domestic staff have to be housed, after all, and their employment would be to some extent be a function of the size of the *domus*. The same argument also applies to works of art. Much Roman art was intended for domestic use, and requirements for wall-paintings, furniture and the like would vary with the size of the house.'

⁷⁵⁶ Cf. Watts 1987, 343. Thus in many static rooms from the Fourth Style period a particular monochrome decoration scheme was used in the wall painting, cf. Clarke 1991, 176.

⁷⁵⁷ Watts (1987, 124-125 and 344) makes a distinction between 'circulation nodes' in which various activities take place, 'connectors', which serve only for circulation, and 'static spaces', the actual residential rooms. Cf. Clarke 1991, 367.

⁷⁵⁸ Cf. Schuurman 1990, 57-58 and 61.

5.4 The houses in Herculaneum

In the previous two sections we have outlined some theories about the Roman household and the internal division of the Roman house. Unfortunately these often relate to houses with an *atrium* and a *peristylum*, and in Herculaneum this type of house forms only a limited group. Here we tend to find smaller buildings where the modest amount of available space was divided as efficiently as possible. In many cases the buildings were too narrow for a traditional *atrium* house, but other considerations may also have played a role. The occupants may, for example, have preferred a simple disposition of rooms. This is suggested by the fact that several of the large houses overlooking the sea, which certainly had enough space for an *atrium* or *peristylum* house, were laid out quite differently, the priority being given to personal taste. In this section we examine the different types of house which the archaeological literature has distinguished in Herculaneum.

The first classification of the houses, based on the ground plan and the social status of the occupants, is found in A. Maiuri's general survey (1958, 197). Maiuri begins with the *atrium* houses, which he divides into two categories: one for the patricians and one for the middle class. The large houses overlooking the sea he regards as a third group. He accommodates all the remaining houses in a further five, somewhat incoherent, categories. J.E. Packer (1975) has concentrated upon these, introducing the terms 'irregular houses' and 'middle and lower class houses'. He also adds 'shop buildings', noting that surprisingly costly items were sometimes found in such places. Maiuri's division into eight categories has come in for some justified criticism. A. Wallace-Hadrill (1991A, 253-254) correctly points out that Maiuri began with two mistaken assumptions: one, that houses with shops and workshops were socially inferior to houses with a purely residential function; and two, that houses with a traditional *atrium* rank above houses with a non-traditional ground plan. R. de Kind (1992, 249 and 1998) makes the criticism that by taking the *domus* with rooms on both sides of the *atrium* as his model, Maiuri has been forced to consign all the houses with different ground plans to the five residual categories. De Kind also rightly regards Maiuri's method of establishing the social status of the occupants as extremely subjective.

Recent studies have beaten new paths. Thus M.C. van Binnebeke (1991, 136-139) identifies three groups of house according to function: those with a purely residential function (1), those with a purely economic function (2) and those in which the residential and economic functions are combined (3). In the first group (and in the domestic sections of the third) she echoes Vitruvius in distinguishing between private rooms (*triclinia*, *cubicula*, *oeci*), public rooms (*fauces*, *atria*, halls), service rooms (kitchens, storerooms), passages and stairways. The houses with a purely economic function could cover one or more rooms.

De Kind (1992, 245-258) ends with a survey of the literature and of the typologies which have been so far proposed. In his view it is not so much the *atrium* as the available space - and especially the breadth of a building - which determines the type of house (De Kind 1992, 247-248). On this basis he distinguishes eight types. Types 1-3 are variants of *atrium* houses, the other types are not. In his Table I, De Kind (1992, 258) covers the distribution of the various types between the *insulae*: 22 *atrium* houses and 30 others. The *atrium* houses thus form a minority of about 40%. If to the houses with a non-*atrium* ground plan we add the 13 or so units of the *Insula Orientalis* II, then only a third of the housing units in the excavated area of Herculaneum turn out to be *atrium* houses.⁷⁵⁹

If we then return to the theories outlined in the previous sections, we find them of limited value to most of the houses in Herculaneum, since formal *atria* and *peristylia* are often lacking.

⁷⁵⁹ This corresponds with Wallace-Hadrill 1990, 169-170: 29% have an *atrium*. He regards the figures as suspect but indicative, since many small houses do have an *atrium*, while many large ones do not.

Indeed the variety of architectural solutions presented in Herculaneum suggests that individual choice seems to have been a major factor in the design of its buildings. In the larger houses it is probable that other spaces assumed the formal function of the *atria* and *peristylia*, the garden of the Casa dei Cervi for example. In the small houses the priority seems to have been given to the most efficient use of space and there was usually no provision made for purely formal rooms. Rational and less traditional solutions were adopted in which most of the rooms seem to have been 'static', with only the passages connecting them being 'dynamic'.⁷⁶⁰ As one would expect, the larger houses have more dynamic rooms, both in absolute and relative terms: the larger the house, the greater proportion of the total area is ascribed to dynamic spaces. The nature of the dynamic space also differs from that found in the smaller houses. Connecting passageways also exist of course, but the main dynamic spaces are still formal in character: gardens, courtyards, *atria* and *peristylia*. As far as the static rooms are concerned (living, dining and bedrooms) there are resemblances between all the houses. Thus bedrooms must always be large enough for at least one bed, whilst dining rooms must be able to accommodate at least two couches. Most service rooms and rooms with an economic function (for example, kitchens and storerooms, shops and workshops) tend to resemble each other and are more static than dynamic in character.

In small houses the same room often serves both a family and a service function, making it difficult to categorize purely on the basis of shape, position and decoration.⁷⁶¹ It may have been a conscious choice not to define a room's function too closely in the decor, thus leaving open the possibility of various activities in the same room. A multi-functional character can be assumed in such cases.⁷⁶²

The distinction between static, dynamic and service rooms helps us to understand the use of the rooms and the structure of the houses in Herculaneum, irrespective of differences in ground plan. To determine the specific function of a room, we use the criteria formulated for the purpose by Van Binnebeke (1991, 140), with a few adaptations:⁷⁶³

- the position of the room within the house and its relation to other rooms;
- the size of the room (dimensions and surface area) and its relative size within the house;
- the nature of the decoration of the floor, walls and ceiling;
- the position and size of door openings and windows, plus signs of wear on sills and door posts; the room's orientation relative to the light are very significant here;
- the disposition and nature of freestanding furnishing elements;
- other architectural features (such as niches, the provision of water, irregular shape etc.).

Using these criteria we can establish whether a room was static, dynamic or a service room, which in turn enables us to partly or wholly explain the function of furniture found within it. All three types of room occur in every type of house.

⁷⁶⁰ Clarke 1991, 364, cf. 25-26: 'Smaller, less regular houses at Pompeii and Herculaneum force us to enlarge our conception of ritual toward the notion of habitual, rather than prescribed use.' He regards the different layout of the Casa a Graticcio as being due to the density of the Herculaneum population: 'builders designed rooms that provided the basics: light, air, circulation, and privacy.' Clarke 1991, 250: 'The variety of these unconventional houses attests to the inventiveness, and at times the desperation, of city dwellers of slenderer means.' Cf. Guadagno 1993, 90.

⁷⁶¹ Cf. Wallace-Hadrill 1988, 57-58: 'This chimes with the archaeological evidence, where the humbler housing is characterized by the lack of predictable and analysable form, and the intermediate levels by their imitation of the forms of the upper-class.' Watts 1987, 353: 'The irregular house is not really a building type in the sense that the *domus* and the *insula* are. It is an ad hoc arrangement to suite very individual circumstances, rather than a model which could be repeated with slight variations.'

⁷⁶² Jameson (1990, 184) cites this as one of the characteristics of many Greek houses: 'Few rooms reveal a fixed function either in their location or construction.'

⁷⁶³ Cf. Thébert 1985, 369; Wallace-Hadrill 1988, 58; Allison 1992, 236.

5.5 The furniture

We now proceed to a functional analysis of those rooms in which furniture was found. The following table lists all the preserved furniture whose find spots are known (cf. fig. 1), together with an indication of the type of house involved.

furniture	find spot	type of building
bed (cat.no. 1)	Casa del Tramezzo di Legno (III 11)	<i>atrium</i> house
bed (cat.no. 2)	Casa a Graticcio (III 13)	non- <i>atrium</i> house
child's bed (cat.no. 3)	Casa a Graticcio (III 13)	non- <i>atrium</i> house
bed (cat.no. 4)	Casa a Graticcio (III 14)	non- <i>atrium</i> house
<i>biclinium</i> (cat.no. 5)	Casa a Graticcio (III 14)	non- <i>atrium</i> house
<i>biclinium</i> (cat.no. 6)	Casa dell'alcova (IV 4)	non- <i>atrium</i> house
couch (cat.no. 7)	Casa del Mobilio Carbonizzato (V 5)	<i>atrium</i> house
couch (cat.no. 8)	Casa di Nettuno ed Anfitrite (V 6-7)	<i>atrium</i> house
bed (cat.no. 9)	<i>Insula</i> V 22	non- <i>atrium</i> house
bed (cat.no. 10)	Collegio degli Augustali (VI 19-22)	'club building'
cradle (cat.no. 11)	<i>Insula Orientalis</i> I 1a	non- <i>atrium</i> house
couch (cat.no. 12)	<i>Insula Orientalis</i> II 9	shop/accomodation
couch (cat.no. 13)	<i>Insula Orientalis</i> II 10	shop/accomodation
table (cat.no. 15)	Casa del Mobilio Carbonizzato (V 5)	<i>atrium</i> house
table (cat.no. 17)	Collegio degli Augustali (VI 19-22)	'club building'
table (cat.no. 18)	Casa dell'Atrio Corinzio (V 30)	<i>atrium</i> house
table (cat.no. 19)	<i>Insula Orientalis</i> I 1a	non- <i>atrium</i> house
bench (cat.no. 24)	Casa del Sacello di Legno (V 31)	<i>atrium</i> house
<i>aedicula</i> (cat.no. 27)	Casa a Graticcio (III 13)	non- <i>atrium</i> house
<i>aedicula</i> (cat.no. 28)	Shop/accomodation V 17	shop/accomodation
<i>aedicula</i> (cat.no. 29)	Casa del Sacello di Legno (V 31)	<i>atrium</i> house
<i>aedicula</i> (cat.no. 30)	Casa del Salone Nero (VI 11)	<i>atrium</i> house
amphora rack (cat.no. 31)	Casa di Nettuno ed Anfitrite (V 6)	shop off <i>atrium</i> house
amphora rack (cat.no. 32)	<i>Insula</i> VI 12	shop/accomodation
amphora rack (cat.no. 33)	<i>Insula Orientalis</i> II 9	shop/accomodation
rack (cat.no. 34)	<i>Insula</i> V 12	shop off <i>atrium</i> house
cupboard (cat.no. 35)	Casa a Graticcio (III 14)	non- <i>atrium</i> house
cupboard (cat.no. 36)	Casa a Graticcio (III 14)	non- <i>atrium</i> house
cupboard (cat.no. 37)	Shop/accomodation V 17	shop/accomodation
wall cupboard (cat.no. 38)	<i>Insula Orientalis</i> I 1	<i>atrium</i> house
cupboard (cat.no. 39)	Casa del bicentenario (V 15)	<i>atrium</i> house

The above table reveals that 29 of the pieces come from private houses and two from a semi-public 'club' building. Ten pieces come from *atrium* houses, two from shops attached to *atrium* houses, six from shops or workshops with an accompanying domestic function and eleven from non-*atrium* houses. Thus only 30% of the preserved furniture comes from *atrium* houses, further underlining the difficulty of using conventional models of the Roman house to explain the function of rooms (and thus of the furniture found in them) in Herculaneum. Greater clarity, we feel, comes from using the static/dynamic/service room model, which can be applied to all the houses in the town. Even the two pieces found in the Collegio degli Augustali fit into such an analysis, since they come from a room very like a static room in a private house.

The find circumstances and function of beds and couches, tables, seating and storage furniture is now presented in turn. The context, in so far as this is known, is given under code 2.3 in the catalogue. The function, in so far as this can be thereby deduced, appears under code 2.1.3. The nature of the rooms is determined using the criteria presented in § 5.4 above. Besides the preserved furniture, pieces which were lost after discovery are also included in the analysis whenever their find circumstances are known from the excavation reports.

5.5.1 *Beds and couches*

The beds and couches can be broadly distinguished from each other on the basis of the room in which they were found. The beds, of which there are seven, were primarily slept on, while the six couches were reclined upon during meals. The last group includes two *biclinia*, a combination of two couches at right angles to each other (cat.nos. 5 and 6). The distinction is presented in the following list.

furniture	function
bed (cat.no. 1)	sleeping
bed (cat.no. 2)	sleeping
child's bed (cat.no.3)	sleeping
bed (cat.no. 4)	sleeping
<i>biclinium</i> (cat.no. 5)	eating
<i>biclinium</i> (cat.no. 6)	eating
couch (cat.no. 7)	eating
couch (cat.no. 8)	eating
bed (cat.no. 9)	sleeping
bed (cat.no. 10)	sleeping
cradle (cat.no. 11)	sleeping
couch (cat.no. 12)	eating
couch (cat.no. 13)	eating

Cat.nos. 7 and 12 come from rooms in which another couch was also found; one might therefore suspect that they too belonged to *biclinia*, but in these cases the pairs do not form a single whole. Cat.no. 8 may also have been combined with a second couch. Clarke (1991, 254) thought that three beds once stood in room 7 of the Casa di Nettuno ed Anfitrite, but the opening to the adjoining *nymphaeum* would then have been blocked. We can thus assume that this room also served as a *biclinium*. *Biclinia* could 'seat' four people at the most, two per couch, who each lay at a slight angle (see fig. 30, which depicts the larger but related *triclinium*).⁷⁶⁴ Cat.no. 13, found in room a of the *Insula Orientalis* II 10, was possibly a couch for a single person. The rich inventory of this room makes it difficult to identify a specific function; perhaps a wide range of activities took place there.

The excavation reports also mention various other beds and couches, five of which can be identified as being for sleeping, and four for dining.⁷⁶⁵ This last group includes two *biclinia*.

⁷⁶⁴ For *biclinia* see also § 3.2.2.

⁷⁶⁵ Dining couches: house II 5, upper floor (see appendix 1: 19 June 1869): wooden *biclinium*, found in combination with a white marble table top on a coloured marble support (decoration: Bacchic figure with a garland of leaves and grapes); Casa a Graticcio, room 11: 2 bed legs (see appendix 1: 26-10-1927); *Insula* IV, on a first floor (see appendix 1: 12-12-1928): two

There are seven other pieces which cannot be definitely ascribed to either bedrooms or dining rooms.⁷⁶⁶ Remains of three further couches were found in room 11 of the Casa dell'Atrio Corinzio, the only room in Herculaneum which was definitely being used as a *triclinium* in 79 A.D.⁷⁶⁷ In such a dining room, nine people could comfortably recline during a meal (fig. 30).

The large quantity of bed legs found in the 18th century indicate that a far greater number of beds were originally present. This is confirmed by many details in the form and decoration of bedrooms and dining rooms which indicate where beds and couches once stood. A simple line in the mosaic or a more complicated motif, such as plaiting or a meander, can mark the position of a bed, as can a slightly raised floor. Recesses or niches in walls often show where a room has been enlarged to accommodate a bed. This sort of recess can have various forms and is found in both bedrooms and dining rooms (see also § 3.2.1).⁷⁶⁸ In the middle of the mosaic floor of dining rooms we frequently find a square section (*emblema*) which is more richly decorated than the surrounding area. This indicates the position for a table, while the plainer area marks the space for two or three couches. An example of such an *emblema*, with a panther and a *cornucopia* in mosaic, occurs in a room on the upper floor of the Casa Sannitica.⁷⁶⁹ Again, the wall paintings of bedrooms and dining rooms often make a distinction between the places where beds and couches once stood along the wall and the free space which lay in front of them.⁷⁷⁰ Variations in the ceiling can also indicate the position of beds, which were often placed in an alcove or under a barrel vault.⁷⁷¹ It is dangerous, however, to rely exclusively on such details in any functional analysis, because an original bedroom or dining room could well have acquired a new function some time before 79 A.D..

Wallace-Hadrill (1991, 202 and 223) observes the generous evidence for beds (bed recesses as well as actual beds) in Herculaneum and poses a number of pertinent questions: 'How many sleepers should we allow per bed? How many beds were not slept in on a regular basis? How

couches at an angle of 90° (*biclinium*); room on a first floor (see appendix 1: 16 and 18-5-1933): couch, found in combination with a bronze candelabrum, a dish, a small vase and a small terracotta amphora. Sleeping beds: Casa dello Scheletro, room 18: bed leg in combination with a raised section of floor for placing a bed (see appendix 1: 5-7-1927); Casa a Graticcio, rooms 2 and 3, ground floor (see appendix 1: 18-12-1928) both contained remains of a bed; Casa del Sacello di Legno, ground floor, room 2 (see appendix 1: 2-3-1934/13-3-1934/17-3-1934/19-3-1934): a wooden table and a cupboard-*aedicula* (cat.nr. 29) were found in combination with a bed; Casa del Sacello di Legno, first floor: (see appendix 1: 2-3-1934/31-3-1934/4-4-1934/13-4-1934/19-4-1934): besides a bed, this room contained a chest with wax tablets and a bench (cat.nr. 24).

⁷⁶⁶ In February 1871, in a room on the first floor of the Casa del Tramezzo di Legno, presumably overlooking the garden, were found a small cupboard containing two lamps and the remains of a glass bottle, as well as a bed; Casa del Tramezzo di Legno, upper floor: 17-4-1928: bed, marble table on one support and shelf with terracotta mug, glass *unguentarium* and bronze coin; probable beds in bedrooms: Casa Sannitica, first floor (see appendix 1: 3 and 10-5-1928): bed leg, further inventory: chest, bronze statuettes of Mercury and Venus, terracotta statuette of a sitting woman; Casa a Graticcio, first floor, room 3 (Maiuri 1958, 418): wooden bed in combination with household items in bronze and terracotta, including three lamps and jewelry; Casa a Graticcio, first floor, room 4 (Maiuri 1958, 419): bed, marble table on one support; Casa dell'Alcova, ground floor, room 1: 16-9-1929, wooden bed, in combination with textiles, a terracotta lamp and terracotta vessels; Casa dei Due Atri (VI 28-29), room 3 (16, 17, 22-11-1939): bed, in combination with a chest containing two bronze vessels, a bronze bell, wax tablets, two pouches with coins, two silver spoons, a bronze spoon, glass vessels, condiments, grain and a small wooden box; second chest without contents.

⁷⁶⁷ See appendix 1: 16-11-1933.

⁷⁶⁸ Examples at Herculaneum are: Casa Sannitica, room 3: two recesses to hold one bed, maximum dimensions 2,24 x 1,40 m.; Casa del Mobilio Carbonizzato, room 3: one recess with room for a bed of max. 1,22 x 2,32 m.; id. *tablinum*: one recess in the north wall giving a maximum space of 1,18 x 3,65 m. = 1½ couches, or one couch lengthwise plus one couch widthwise. This room therefore had space for a *biclinium* or a *triclinium*; Casa del Gran Portale, room 1: two long recesses in the east and west walls for *lecti tricliniarii* (fig. 31). See also Maiuri 1958, 471 nota 29, and Dunbabin 1991, 138 note 13.

⁷⁶⁹ See appendix 1: 10-5-1928.

⁷⁷⁰ In Second Style walls this is often most clearly demonstrated by a change in the painted architectural elements at the relevant places, for example by a transition from pilasters to 'round' columns, or by a shift in level or colour. This does not occur in Herculaneum, but there are examples in Pompeii, including rooms 6, 8 and 16 of the Villa dei Misteri. For the recognizability of *triclinia* in the decoration of walls and floors, see Dunbabin 1991, 123 and note 17.

⁷⁷¹ For the indication of positions for beds in the architecture and decoration of bedrooms, see Elia 1932.

many slept elsewhere than in beds, e.g. on mattresses on the floor?' and 'Would analysis of the beds point towards the distribution of married couples/children/slaves etc. within the house?' In our view these questions cannot be convincingly answered. Of the beds which were primarily used to sleep on, five are broad enough to compare with our three-quarter bed.⁷⁷² They are large enough for two people, but we can never know how often they were so occupied.⁷⁷³ Even when a lot of beds and couches are found in one house, we cannot draw conclusions about the number of occupants in the building since we do not know whether dining couches were also slept on at night. Nor can we discover whether slaves slept on beds or, for example, on floor mats which have left no trace behind. Even in the case of the Casa a Graticcio, where in the modest area of two apartments there is evidence for a large number of beds, we cannot do more than guess at the number of inhabitants, far less break it down into men, women and children.

It has already been established that beds with boards could have different functions.⁷⁷⁴ Of the three examples which are clearly dining furniture (cat.nos. 7, 12 and 13), two have boards which are horizontally divided (cat.nos. 7 and 13; figs. 59, 88) the lower part being curved and the upper part vertical. This distinct form seems to derive from the curved *fulcra* which were mounted on some *lecti tricliniaries*, the type of couch most favoured for the reclining diner from the Hellenistic period to the early Empire (fig. 30).⁷⁷⁵ The similar function seems here to have led to a similar form (see also § 3.2.1). In the beds for sleeping and in cat.no. 12, the boards are quite vertical and in cat.no. 9 (figs. 64-65) the head board is angled. Of particular interest are two couches (cat.nos. 7 and 13) which have been very carefully made. These are the most expensively produced of the preserved beds and might be cautiously regarded as formal pieces.

The literary sources have already been discussed in § 3.2, but here we should mention some further literary references which bear upon function. Several texts discuss the etymology of the word *lectus*.⁷⁷⁶ Other sources clearly refer to beds for sleeping, using the term *lectus cubicularis*.⁷⁷⁷ Sometimes it is clear that a two person bed is meant.⁷⁷⁸ On several occasions beds are mentioned in rooms reserved for sick people or pregnant women.⁷⁷⁹ They also appear as furniture upon which to study.⁷⁸⁰ A number of writers discuss dining couches (*lecti*

⁷⁷² Cat.nos. 1, 2, 4, 9 and 10.

⁷⁷³ Thus Wallace-Hadrill (1991, 223) rightly draws the following conclusion: 'without unambiguous evidence of double beds, there seems little chance of identifying households with more than one married couple.'

⁷⁷⁴ For example by Feulner 1930, 30/1980, 23.

⁷⁷⁵ An example of three *lecti* was found in the Villa di Contrada Pisanella at Boscoreale on 22-7-1898, cf. NSc 1899, 15. For the positioning of three *lecti tricliniaries* in a pi-form along the walls of a room and the placing of *fulcra* at the two ends of the formation, at the 'head' of the *lectus summus* and the 'foot' of the *lectus imus*, see Mau 1896, 76-80. The middle couch, the *lectus medius*, had no *fulcrum*. A round table usually stood between the couches. For the hierarchy in places see Mau 1908, 269-270 and fig. 137. See also Hug 1939, 94; Cagnat-Chapot 1920, 411. For *fulcra* see Anderson 1889, 324; Dunbabin 1991, 121 and fig. 5; see also § 4.7.1. above. The *fulcra* should be seen as decorative ends to the couches and probably had no supporting function; they also served to prevent the mattresses from slipping. The users leaned over cushions which lay along the front edge of the couches facing into the *triclinium*. See also Mols 1992, 192 (review of Faust 1989).

⁷⁷⁶ Fest. 102 L; Paul., Fest. 115 L: *Lectus dictus vel a collectis foliis ad cubitandum, vel quod fatigatos ad se alliciat, vel a Graeco λέκτρον*. (The word *lectus* [bed] is derived either from the leaves gathered [*collectis*] to sleep on, or because such furniture entices the weary towards it [*alliciat*], or from the Greek *léktron* [bed].).

⁷⁷⁷ Cato, Agr. 10; Cic., Div. 2.134; Cic., Tusc. 5.59; Rut. Lup. 2.7; SHA (Lampridius), Heliogabalus 20.4; V.Max. 9.13.ext. 4; Var., L. 8.32. Bed in *cubiculum*: Apul., Fl. 23; Cato, Agr. 10.5; Suet., Jul. 49.7; Tac., Hist. 4.77.2.

⁷⁷⁸ Cic., Att. 14.13.5; Hieronymus, Epistulae 22.15; Iuv., 9.74-78; Liv. 1.58.7; Mart. 10.38.6-8; id. 10.38.7-8; Ov., Am. 3.14.26; Pl., Am. 513; Pl., Poen. 696-698; Pompon., Com. 195; Prop. 2.15.1-2. This is also apparent from several klinè monuments which depict two people on a bed with boards on three sides: cf. Wrede 1981, 109-110 Nr. 2 and 111 Abb. 26; Louvre, Mag. no inv.nr.; id. 110-111 Nr. 3, Abb. 27; Villa d'Este in Tivoli; id. 112 Abb. 128; Museo Gregoriano Profano of the Vatican Museums.

⁷⁷⁹ Beds for the sick: Plin., Nat. 26.14; Plin., Ep. 3.7.4.; for pregnant women: Iuv. 6.594; Soranos, Gynaecia 2.2.3.

⁷⁸⁰ Cic., de Orat. 3.17; Claudianus Mamertus, de Statu animae 2.8; Hor., S. 1.4.133-134; Ov., Tr. 1.11.37-38; Plin., Ep. 5.5; Sen., Ep. 72.2; Suet., Aug. 78.1.

tricliniares; fig. 26) or the rooms in which they stood (*triclinia*).⁷⁸¹ Even without this specific denomination, it is often quite clear that *lecti* are being referred to as dining furniture.⁷⁸² The term *grabat(ul)us* likewise appears in two senses: that of a couch for dining and that of a bed for sleeping.⁷⁸³

The custom of reclining to eat, which was an eastern practice, was adopted by the Greeks during the Orientalizing period (7th century B.C.).⁷⁸⁴ It seems that the Romans, who had in turn adopted the practice from the Greeks, at first used only the couch with *fulcrum* (fig. 26). From the 1st century A.D., however, couches with boards began to be fashionable and the couch with *fulcrum* fell gradually out of favour.⁷⁸⁵ The eruption of Vesuvius occurred at exactly the time that the fashion was changing, and thus we find evidence of both types in Herculaneum. From the 3rd century A.D. yet another type of dining room couch appeared: the *sigma*, which had the form of a crescent. This type of couch appears in both texts and depictions,⁷⁸⁶ which tell us that it could accommodate six to eight people. *Sigmata* were probably already in use outdoors before the third century. An example has been found in Pompeii.⁷⁸⁷ In the late-Roman period there was a return to the sitting position for eating.⁷⁸⁸

5.5.2 Tables

The three tables in Herculaneum whose the precise find circumstances are known were all used

⁷⁸¹ Acta Arvalia a. post Chr. 218; Cic., Att. 13.52; Cic., Mur. 75-76; Cic., de Orat. 2.263; Cic., Ver. 2.3.61; Hyg., Fab. 274.1; Liv. 39.46.3; Petr. 22; Naev., Com. 81; Plin., Nat. 33.146; Plin., Nat. 34.9; Quint., Inst. 11.2.13; SHA (Lampridius), Heliogabalus 20.4; id. 25.7; Var., L. 8.32.

⁷⁸² Cic., Ver. 2.3.105; Fron., Str. 4.3.7; Gel. 13.11.1-3; Hirt., Gal. 8.51.3; Hor., S. 1.4.86-88; Hor., S. 2.8.20-24 and 39-41; Hor., Ep. 1.5.1-3; Iuv. 5.15-18; id. 8.177-178; id. 11.93-99; Liv. 28.18.4-5; Macr. 1.12; id. 3.13.11; Mart. 3.82.5-7; id. 6.74.1; Mart. 12.66.5-7; Naev., Com. 26; Ov., Met. 10.437; id. 12.597; Petr. 21; Petr. 38; Petr. 70.11; Pl., Am. 804-808; Pl., As. 221; Pl., Men. 100-103; Pl., St. 377; Pl., St. 468-493; Plin., Nat. 33.144; Ploutarchos, Brutus 34.8; Ploutarchos, Cato Min. 56.4; Ploutarchos, Quaestiones convivales 1.3.1; Sen., de Constantia sapientis 10.2; Serv., A. 1.698; Suet., Aug. 64.2 and 5; Suet., Cl. 32; Suet., Cal. 32.4; Sulpicius Severus, Vita S. Martini 20.4; Tac., Ann. 13.16; Ter., Hau. 125-126; Var., L. 9.9; id. 9.46-47.

⁷⁸³ *Grabat(ul)us*: Var., L. 8.32. specifically to sleep on: Apul., Met. 1.16; Itala, Mattheus 9.6; Petr., Sat. 97; to give birth on: Mart. 6.39.4; to use whilst eating: Apul., Met. 2.15; Vit. 6.3.10. For the *lectus deliacus* (Plin., Nat. 33.144) and the *lectus punicanus*, see § 3.2.

⁷⁸⁴ Cf. Fehr 1971, 16-18 and 120-129; Dentzer 1969, 195-224.

⁷⁸⁵ At the time when Servius was writing his commentary on Virgil's Aeneid (4th-5th century A.D.) the *lecti tricliniares* had fallen completely out of fashion. This is apparent from the fact that the author explains to his readers what a *triclinium* is (Serv., A. 1.698).

⁷⁸⁶ Ausonius, Ephemeræ 2.5.5-6; Mart. 10.48.5-6; id. 14.87; Paulinus Petricordia, Carmina 3.70-78; SHA (Spartianus), Hadrianus 17.4; SHA (Lampridius), Heliogabalus 25.2-3; id. 28.5; id. 29.3; Sidonius Apollinaris, Carmina 17.5-8. A synonym for the term *sigma* is *stibadium*: Mart. 14.87 (tit.); Plin., Ep. 5.6.36; Sidonius Apollinaris, Epistulae 1.11.4; id. 1.11.14; id. 2.2.11. According to Amedick (1991, 25-32) the *stibadium* was originally an improvised bed in the open air. She also regarded the outdoor *triclinia* found in Pompeii as *stibadia* (Amedick 1991, 37; Amedick 1993, passim). From the start of the 2nd century we find scenes with *stibadia* appearing on sarcophagi, originally only in mythological subjects, but from the 3rd century onwards in the profane as well. The earliest known depiction of a *stibadium* is that in the *Columbarium* of the Villa Doria Pamphilj in Rome which can be dated in the Augustan period, cf. Van der Meer 1983, 107. For eating facilities in Pompeian gardens, see Soprano 1950 where a distinction is made between *triclinia*, *biclinia* and one *sigma* in house VIII 3, 15 (Casa di Adone). Additional material on this subject is provided by Anderson (1990): reconstruction of the wooden summer *triclinium* in the Casa del Torello (V 1, 7) in Pompeii; Dunbabin 1991, 123-128 and 139 note 23-28 (giving 56 examples with literature). For *sigma-stibadium* in later antiquity, see Dunbabin 1991, 128-132 and 142 note 50; she here deals with the *stibadium* in the *Serapeum* of Hadrian's villa at Tivoli and gives the main literature about it (Dunbabin 1991, 132 and note 75). Several wooden outdoor *triclinia*, of which impressions in the volcanic material were found in Pompeii, should be regarded as platforms upon which to lay loose mattresses rather than as real couches, cf. NSC 1929, 386 and 387 (Casa di Paquius Proculus).

⁷⁸⁷ Cf. Dunbabin 1991, 130-135.

⁷⁸⁸ Blanck 1981 discusses this transition on the basis of a mosaic depicting a feast where the diners are sitting on benches, found in 1896 at Roman Carthage (Duar-Ech-Chott) and currently in the museum at Bardo.

as dining tables (cat.nos. 15, 17 and 19).⁷⁸⁹ We can assume by extension that five of the other six tables served the same function.⁷⁹⁰ Likewise, three loose table legs with greyhound decoration, which were found on the first floor of the Casa Sannitica and are now lost, would also have come from dining tables.⁷⁹¹ The only exception, in fact, is the table with a crescent shaped tabletop and legs in the form of herms (cat.no. 16). The possible function of this piece (as an extension to another table or to stand against a column) has already been discussed in § 3.3. In the Casa del Sacello di Legno, a wooden table of unknown form was found in a room (2) which, to judge by its general appearance and the presence of a bed, seems to have served primarily as a bedroom. It is possible, however, that it was a resting and dining room for a single person, since it also contained a cupboard *aedicula* with crockery and figures.⁷⁹²

The written evidence in relation to the *mensa delphica* was examined in § 3.3. Martial (12.66.5-7) calls it a dining table. In fact it is generally apparent from antique authors that tables were used during meals.⁷⁹³ Sometimes they are even referred to in combination with couches.⁷⁹⁴ A decorated three-legged table can frequently be seen on sarcophagi, in depictions with *stibadia*.⁷⁹⁵ On two reliefs such tables make up part of a *triclinium*.⁷⁹⁶ The wooden tables in painted banqueting scenes found in Pompeii invariably carry crockery,⁷⁹⁷ and S. Steingraber informs us that three-legged tables always appear in Etruscan banqueting scenes, where again they are clearly dining tables.⁷⁹⁸ C. Moss (1988, 275-276), discussing the function of Roman marble tables, observes that these were never used as dining tables, not even in the round form with three decorated legs. Dining tables, he says, were either wooden or masonry. The finds in Herculaneum and Pompeii confirm this. In Pompeii various *triclinia* built entirely of masonry, the round table included, are found in gardens. According to Moss, when marble tables did stand in dining rooms they served as show tables for the display of crockery. Some of the marble tables used in private houses possibly had something to do with the household cult.⁷⁹⁹ Others stood in bedrooms,⁸⁰⁰ or carried statues or crockery.⁸⁰¹

⁷⁸⁹ Cat.no. 15, found in the Casa del Mobilio Carbonizzato, room 8, in combination with two couches (one of which is cat.no. 7) and a terracotta lamp, see appendix 1: 9-2-1933/10-2-1933/2-3-1933/9-3-1933/31-3-1933; cat.no. 17, found in the Collegio degli Augustali, room a, in combination with a bed (cat.no. 10); cat.no. 19, found in the *Insula orientalis* I 1a, room E, see appendix 1: 23-3-1940 to 5-4-1940: with the table were 5 adult skeletons, one skeleton of a child and one of a baby in a cradle (cat.nr. 11), as well as a cupboard hung on the wall with a glass vessel, a terracotta perfume bottle, a glass bottle and two dice. Loose on the floor lay an amphora, nine precious stones, two bronze coins and five pieces of terracotta crockery. Cat.no. 18, was definitely found in the Casa dell'Atrio Corinzio, but it is not known in which room.

⁷⁹⁰ Cat.nos. 14, 18, 20-22.

⁷⁹¹ See appendix 1: 11-5-1928.

⁷⁹² See appendix 1: 2-3-1934/13-3-1934/17-3-1934/19-3-1934.

⁷⁹³ Thus the terms *escaria* and *cilliba* appear originally for square, and later for round, dining tables: Paul., Fest. 67 L; Var., L. 5.118 and 120. At the same time we find the terms *mensa*, *mensula* and *orbis* being used to indicate dining tables: Acc., Trag. 217-218; Apul., Met. 2.11; Catul. 64.45; id. 64.303-304; Cic., Pis. 67; Cic., Phil. 2.76; Isid., Orig. 20.3; Iuv. 1.138; Iuv. 11.117; Lucil. 1062 M; Mart. 2.43.9; id. 11.29; id. 12.29.11-14; Ov., Ars 1.601; Petr. 68; id. 73; Pl., Am. 804-808; Pl., As. 829; Pl., Men. 78; id. 89; Pl. Men. 100-103; Pl., Per. 853-854; Pl., Truc. 364; Plin., Nat. 19.168; id. 28.26; Prop. 2.16.5; Prudentius, Cathemerinon 8.13-16; Sen., Ep. 83.6; Sen., de Tranquillitate Animi 1.7; Serv., A. 1.723; id. 7.111; Sil. 11.270-271; Verg., G. 4.132-133; id. 4.378-379; Verg., A. 1.216-217; Verg., A. 11.738.

⁷⁹⁴ Apul., Met. 2.19; id. 4.7; Cic., Tusc. 5.61; Lucil. 443 M; Ov., Met. 8.655-663; Pl., Am. 803-807; Pl., Most. 308; Suet., Aug. 73.1.

⁷⁹⁵ Cf. Amedick 1991, Taf. 26-37.

⁷⁹⁶ Cf. Felletti Maj 1977 tav. LXXVIII (187): relief from L'Aquila, from the Chiesa di S. Stefano and a relief from Sentinum, now in Ancona, Museo Nazionale, cf. Felletti Maj 1977, tav. LXXXIII (193). The idea that each couch in a *triclinium* had its own table, with a large table in the centre, which is put forward by Talamo Vattimo en Cima di Puolo (1990, 66), is definitely mistaken. It is denied by the depictions.

⁷⁹⁷ Cf. Varone 1993, 622-630. A table with crockery is depicted on a painting from Delos, cf. LIMC VI 1, 206 Nr. 17, LIMC VI 2, 97, Nr. 17, dating from the 2nd or 1st century B.C..

⁷⁹⁸ Steingraber 1979, 168-169, Typus 2.

⁷⁹⁹ Moss 1988, 260-268.

⁸⁰⁰ Moss 1988, 276-277.

⁸⁰¹ Moss 1988, 277-289.

Several marble tables have been found in shops.⁸⁰² In Moss's view (1988, 293-353), marble tables on one, three or four legs were not primarily garden furniture, but were distributed throughout the house. Their form determined their position: tables which could be looked at from all sides took central positions in large rooms. Tables on a single support stood against walls. Three-legged tables usually occupied a prominent position in gardens or *peristylia* and had a purely formal function.⁸⁰³ This distinguishes them from the wooden examples found in Herculaneum, which were clearly used in dining rooms.

Perhaps there were practical reasons for the fact that dining tables were made of wood and not of marble. The open space in a dining room was often limited and diners could not usually approach their couches from the back. They would therefore have taken their places from the front and, with little room to manoeuvre, would have sometimes wished to shift the central table. It would thus need to be light, which is not the case with marble.⁸⁰⁴ A moveable, light-weight table was the ideal solution and would further have facilitated the cleaning of the room.

A striking feature of the wooden dining tables, and one which distinguishes them from most of the other furniture in Herculaneum, is that they were made of hard wood. *Abies alba*, the usual timber, was not suitable for carving, and besides did not have the visual impact of a hard wood. These tables should therefore be regarded as relatively expensive pieces and their place in dining rooms, the main rooms in which guests were received, is not at all surprising.

Herculaneum may have yielded one example of a 'table' used by craftsmen, such as appears in several literary sources.⁸⁰⁵ The excavation reports refer to a workbench, found in room 7 on the ground floor of the Casa a Graticcio.⁸⁰⁶ Tables in kitchens, mentioned by Varro, have not been found in Herculaneum.⁸⁰⁷

5.5.3 Seating

We know the find circumstances of only one piece of seating in Herculaneum. This is the bench (cat.no. 24) which was found on the first floor of the Casa del Sacello di Legno in a small room which also contained a bed and a chest with wax tablets inside.⁸⁰⁸ The primary function of this room seems to have been that of a bedroom, but the bench, chest and tablets suggest that it also served as a workroom or study. There is little to be said about the function of the remaining three seating pieces (cat.nos. 23, 25 and 26). The stool (cat.no. 23; figs. 125-126) can be regarded as a relatively expensive item due to the decorative star in wood mosaic on its seat. In many places we find masonry benches built outside the houses, upon which passers by or the residents themselves may have taken their ease.⁸⁰⁹ The terminology for benches (*subsellium* or *scamnum*) is dealt with in § 3.4.1.

The antique texts refer to two types of seating which are not found in Herculaneum: the *cathedra* and the *solium*. The first was probably a chair with only a back rest, while the second had both back and arm rests. Both terms usually appear in the context of a seat associated with high office, and in an official, public setting. This possibly explains why they have not thus far

⁸⁰² Moss 1988, 290-292.

⁸⁰³ Only two marble examples of this type come from *atria*: Pompeii, Casa dei Ceii and VIII 2, 1, cf. Moss 1988, 328-332. Here too they should always be regarded, as in gardens, as representative furniture, cf. Moss 1988, 373-381.

⁸⁰⁴ Cf. Eames 1977, 215, who examines the advantages of movable medieval furniture.

⁸⁰⁵ Tac., Ann. 13.16; Tert., de Pallio 5.5; V.Fl. 2.651-655.

⁸⁰⁶ Found on 23-2-1929: see appendix 1.

⁸⁰⁷ *Urnarium*: Var., L. 5.126.

⁸⁰⁸ See appendix 1: 2-3-1934/31-3-1934/4-4-1934/13-4-1934/19-4-1934.

⁸⁰⁹ Tran Tam Tinh (1988, 10 note 3) lists these benches.

been found in the houses of Herculaneum.⁸¹⁰

5.5.4 Storage furniture

Storage furniture has survived from several of the houses in Herculaneum. There are also traces of alternative storage spaces which were not strictly furniture. The presence of wall cupboards, for example, is often indicated by a niche in the wall. These can run right down to the floor or end at a higher level.⁸¹¹ Holes in the wall often reveal where wooden supports were fitted to carry shelves.⁸¹² In one instance, in the east wall of shop V 17, there is an entire cupboard built in masonry. Further storage was provided by the dead ends of passageways, closable *alae* and recesses under stairs. Most household goods, however, were stored in cupboards, racks or chests. *Aediculae* can also be regarded as storage furniture.

Cupboards

The excavation reports sometimes provide important information on the contents and find circumstances of the surviving cupboards. One example (cat.no. 35; fig. 156) was hung on the south wall of room 1 on the upper floor of the Casa a Graticcio. The somewhat dark, closable room, combined with the cupboard, a marble table on a round support and a wooden bed (cat.no. 4; fig. 47), strongly suggest a bedroom.⁸¹³ Nothing is known of the contents of the cupboard.

Between 16 and 18 February 1927, a cupboard (cat.no. 36; figs. 157-158) with its full contents was uncovered in room 2 on the upper floor of the same apartment. The top shelf carried dice, a cord with glass beads and tableware in glass and terracotta, while the middle shelf held more tableware, most of it terracotta. The room also contained a *biclinium* (cat.no. 5; figs. 49-51) and other finds which indicate that it was primarily used as a dining room.

In the kitchen on the first floor of the house attached to shop V 17 stood a cupboard (cat.no. 37; figs. 159-160) which chiefly held terracotta ware.⁸¹⁴ A wall cupboard (cat.no. 38; figs. 161, 164), which could be closed with two small doors, sat in the north wall of room 1 of the Casa della Gemma. It contained terracotta and glassware plus a small bronze box with dice.⁸¹⁵ The room had an *opus signinum* floor and the walls were plastered white. Its nature and position close to the entrance make one suspect accommodation for a slave, perhaps the

⁸¹⁰ *Solium*: seat for important persons and gods; cf. Stemmer 1985, 229-239; the text which best reveals the status of this seat is Sen., Ag. 264: *Lex alia solio est, alia privato in toro*. (There is one law for the throne, another for the private bed.) The meaning here is that other laws apply for kings than for private persons. The *solium* appears in a similar sense in: Amp. 30.1; Catul. 64.45; Cic., Fin. 2.69; Cic., Rep. 3.12; Claudianus, Laudatio Stilichonis 3.199-200; Hor., Carm. 2.2.17; Hor., Ep. 1.17.33-35; Isid., Orig. 20.11.10; Liv. 1.47.4; Lucr. 5.1136; Ov., Fast. 6.353-354; Ov., Met. 2.23-24; id. 6.650; id. 14.261-262; Petr. 51; Petr. 60; Pl., Trin. 940; Serv., A. 1.506; Stat., Silv. 3.1.25; id. 3.3.28-30; Stat., Theb. 8.286-287; Suet., Cal. 57.3; Tac., Ann. 2.2; V.Fl. 2.309-310; id. 6.741-743; Verg., A. 1.506; id. 10.116-117; id. 11.301. The *solium* is mentioned four times as a piece of furniture in a house: Cic., Leg. 1.10 (for receiving clients); id., de Orat. 2.226; Liv. 39.53.4; Luc. 4.689-692; Cato (Agr. 10.5; 11.3) counted it amongst the inventory of a farmhouse. The types of *solia* given by Richter (1966, 98-104) are all, apart from the wickerwork chairs, Greek forms rather than Roman. *Cathedra*: Ambrosiaster, in Epistulas ad Corinthios 1.14.31; Magnus Aurelius Cassiodorus, Expositio psalmorum 1.1; Iuv. 7.203-205; Mart. 2.14.7-8; Sen., de Brevitate vitae 10.1; Sidonius Apollinaris, Epistulae 7.9.2. Sometimes the *cathedra* appears as a seat for women: Calp., Ecl. 7.26-27; Iuv., 6.88-91; id. 9.52-53; Mart. 3.63.7-8; id. 4.78.3-4; id. 11.99.1-2; id. 12.38.1-2; Phaed. 3.8.4; Sidonius Apollinaris, Epistulae 2.9.4; they are also mentioned as part of the contents of a room: Plin., Ep. 2.17; Sen., de Clementia 3.7.7.

⁸¹¹ Examples in Herculaneum stand in the following rooms: Casa del Tramezzo di Legno (III 9-12), *vestibulum*; shop IV 14, east and west walls; *thermopolium* IV 15-16, east wall; *thermopolium* V 10, west wall; shop V 13, south wall (3 examples); shop VI 12, south wall; *Insula Orientalis* II 5, south wall; *Insula Orientalis* II 13, south wall.

⁸¹² Cf. Grodde 1989, 129-130 and 149; Richter 1966, 78-79 and 115 and fig. 584 = grave relief in the Archaeological Museum in Istanbul, inv. 222, dating from the end of the 1st century B.C..

⁸¹³ See appendix 1: 20-2-1928.

⁸¹⁴ See appendix 1: 8 to 12-11-1937.

⁸¹⁵ See appendix 1: 22-3-1934.

gatekeeper. Another cupboard (cat.no. 39; figs. 162-163, 165) this time containing figs, two terracotta lamps, a bone dice and a glass, was found in room a on the first floor of the Casa del Bicentenario. This may also have been the room of a slave.⁸¹⁶ The remains of a shelf were found on the wall, and a bronze casserole and a terracotta plate lay on the floor.

In the excavation reports one also finds comments on cupboards which have subsequently been lost. The location and find circumstances of these pieces are not always clear, but their contents are often known. Thus in February 1871, in a room on the first floor of the Casa del Tramezzo di Legno, probably overlooking the garden, were found a bed and a small cupboard containing two lamps and the remains of a glass bottle. This would suggest a bedroom. Four other cupboards seem to have come from dining rooms.⁸¹⁷

Most of the cupboards in Herculaneum probably stood in privately used rooms, such as bedrooms and dining rooms, and in kitchens. They commonly held items which were in daily use. No cupboards were found in the storerooms.

Elsewhere we find various cupboards whose contents point to functions other than those which are suggested in Herculaneum. Two small cupboards with terracotta bases were discovered in house V 4, 3 in Pompeii. One of them had a drawer. Their contents included coins (130 silver and 53 bronze), gold, silver and bronze objects (including statuettes), glassware and statuettes in amber and marble.⁸¹⁸ The little cupboard with drawer looks similar to one in Herculaneum (cat.no. 40) for which the find circumstances are unknown. Perhaps it too was used to store valuables.

In the *atrium* of house I 13, 2 in Pompeii a cupboard was found with amongst other things small statuettes and two terracotta lamp holders.⁸¹⁹ In Boscoreale one cupboard has been found in a storage room (pointing to the close proximity of a dining room⁸²⁰) and another in a service room.⁸²¹ Some cupboards suggest dining rooms in which other activities took place.⁸²² In Pompeii, cupboards containing household articles have even been found in *atria* and *peristylia*.⁸²³

According to antique authors, cupboards were used to store away all sorts of dissimilar

⁸¹⁶ See appendix 1: 28-1-1938.

⁸¹⁷ Casa del Tramezzo di Legno: room with table and cupboard, with bronze, glass and terracotta vessels, and a bronze fish-hook: see appendix 1: 23-4-1928; V 27, first floor: cupboard with glass and terracotta vessels, small pieces of glass paste (jewelry?), bone dice, fruit and a bucchero plate: see appendix 1: 2-11-1933; Casa del Bicentenario (V 15), first floor: cupboard with glass bottle, terracotta vessels and a piece of glass paste: see appendix 1: 10-2 and 18-3-1938; *Insula Orientalis* I 1a, room E: cupboard hung on wall with glass vessel, terracotta perfume bottle, a glass bottle and two dice.

⁸¹⁸ Cf. NSc 1899, 208.

⁸¹⁹ Soprintendenza Archeologica di Pompeii, inv. 11511-11636 and 11545-11549: cf. D'Ambrosio/Boriello 1990, 13 n. 7 and p. 39, 41 and 79, cat. 70, 75, 76, 206, 207.

⁸²⁰ Villa in Boscoreale, Località Villa Regina, found in a storage room next to the entrance: cupboard with terracotta and bronze vessels: cf. De Caro 1983.

⁸²¹ Boscoreale, Villa di Contrada Pisanella, found on 31-12-1897, south-west corner of the *porticus*, contents: alabaster *balsamarium*, glass bottles, 3 terracotta plates cf. NSc 1898, 421.

⁸²² Pompeii VI 12, ? : contents: glassware, terracotta and bronze vessels, cf. NSc 1896, 473; Pompeii VI 16, 10: contents: glass and terracotta tableware, cf. NSc 1908, 56-57; Pompeii I 6, 7: contents: bronze *oenochoe*, terracotta vessels and a lamp; cf. NSc 1912, 283; Pompeii, Casa del Fabbro (I 10, 7), *tablinum*: small cupboard with bronze vessels: cf. NSc 1934, 292; Boscoreale, Villa di Contrada Pisanella, room F: contents: lamp lid with figure of Eros, silver items, including a mirror and a *patera*, glassware, toilet articles, surgical instruments and two iron swords, cf. Pasqui 1897, 416. The swords in this last cupboard are particularly striking.

⁸²³ Pompeii, Casa dei Ceii (I 6, 15) *atrium*, contents: shell, razor, necklace, terracotta saucer, cf. NSc 1914, 292-293 (see appendix 3 below); four cupboards in the *atrium* of the Casa del Criptoportico (I 6, 2) in Pompeii, cf. NSc 1929, 420-422. One example contained, amongst other things, a statuette of Apollo, silver items, bronze vessels and glassware; a second contained a golden earring, bronze vessels, a balance, four lead weights and a terracotta lamp; a third two bronze candelabra, bronze vessels and glassware. Boscoreale, Villa di Contrada Pisanella, *atrium*: cupboard with glass bottles and plates on the bottom and bronze vessels, toilet articles and surgical instruments on a shelf; cf. Pasqui 1897, 411-416. In the *peristylum* of the Casa di Iulius Polybius (IX 13, 1-3) stand four cupboards, which contain lamps amongst other things (see appendix 3). In Pompeii, Casa degli Amanti (I 10, 11), *peristylum* a cupboard was also found: cf. NSc 1934, 338-339, contents: two plates, one glass, the other alabaster.

things and this is confirmed by the finds in Herculaneum, Pompeii and Boscoreale. They are mentioned as storage for tools,⁸²⁴ for valuables and money,⁸²⁵ for provisions,⁸²⁶ for scrolls,⁸²⁷ for clothing⁸²⁸ and for erecting the images of ancestors.⁸²⁹

Aediculae

We know the exact find spot for three of the four *aediculae* in Herculaneum. The pediment of one was found in room 5 on the upper floor of the Casa a Graticcio (cat.no. 27; fig. 137). According to the excavation reports, it was hung on the west wall. Various statuettes of gods were found inside: one each of Jupiter, Aesculapius, Diana, Minerva and Harpocrates, plus two of Fortuna and two *Lares*. The figures were of poor quality. In addition there was a bronze weight, a glass plate, bronze coins and small pieces of glass paste. Besides the *aedicula*, the room contained two beds and two vessels, one bronze and one terracotta.⁸³⁰ According to Maiuri (1958, 417), the statuettes came from room 2 on the upper floor of the other apartment in the Casa a Graticcio, but this cannot be right. This second room had already been fully excavated nine months before.⁸³¹ The presence of the two beds (cat.nos. 2 and 3) indicates that the room was used primarily as a bedroom, although it may have served more than one purpose.

One *aedicula* (cat.no. 28; fig. 138) was found in the room behind the kitchen on the upper floor of the shop-cum-house V 17. Of its contents nothing was found, but the form clearly indicates that it was a household shrine. The partition of the apartment, with a living room at the front and a kitchen in the middle, created a poorly lit back room which probably served as a bedroom. The only light came via three windows (two round and one square) from the other rooms.⁸³²

The third example comes from a bedroom (room 2) on the ground floor of the Casa del Sacello di Legno (cat.no. 29; figs. 139-145). This room can be confidently identified thanks to the remains of a bed and the partly vaulted ceiling under which it would once have stood. There is a window with iron bars on the street side (east) and the walls have a simple panel decoration.⁸³³ A wooden table and the crockery found in the cupboard suggests that the room may also have been used as a dining room by one person.⁸³⁴ The top section of the *aedicula* contained, amongst other things, a statuette of Hercules. Maiuri (1958, 254) also mentions the figure of a goddess, which can perhaps be identified as Venus (cf. Mols 1993A, 13-17). Although there were ordinary household objects present in the upper section, far more were found in the lower section, along with a terracotta figure of a lion, bone dice, jewelry and bronze coins. We can thus conclude that the lower section was used as an ordinary cupboard.

All we know about the fourth surviving *aedicula* (cat.no. 30; figs. 146-147) is that it came from the upper floor of the Casa del Salone Nero (VI 13).⁸³⁵ Perhaps it had once contained

⁸²⁴ Gramm. 7.265.1 (=Beda, de Orthographia); Isid., Orig. 15.5.4.

⁸²⁵ Cic., Cael. 52; Cic., Clu. 179-180; Dig. (Pauhus) 1.15.3.2; Pl., Epid. 308-309.

⁸²⁶ Cato, Agr. 11.3 (see also § 3.5.1).

⁸²⁷ Dig. (Ulpianus) 32.52.7; Gloss. V 653.15; Gloss. V 654.23; Gramm., suppl. 241.28; Hieronymus, Commentarium in Mattheum 23.5-6; id. 53.3; Orosius, Historiae 6.15.32; Plin., Ep. 2.17.8; Prudentius, Apotheosis 377; Sen., de Tranquillitate Animi 9.9.6; SHA (Flavius Vopiscus Syracusius), Tacitus 8.1; Sidonius Apollinaris, Epistulae 2.9.4; Vit. 7 pr. 7.

⁸²⁸ Hieronymus, Epistulae 22.32.

⁸²⁹ Plin., Nat. 35.6.

⁸³⁰ The *aediculae* were found on 4-10-1928/9-11-1928/17-11-1928/19-11-1928: see appendix 1.

⁸³¹ The confusion could have arisen from a misreading of the main find data from the two rooms. Excavations took place in room 2 on 17-2-1928 and in room 5 (indicated in the excavation reports as room 3) on 17-11-1928. In the handwritten manuscript, the 11 can be interpreted as a 2.

⁸³² Cf. Maiuri 1958, 238.

⁸³³ Cf. Van Binnebeke 1993, 231.

⁸³⁴ See appendix 1: 2-3-1934/13-3-1934/17-3-1934/19-3-1934.

⁸³⁵ See appendix 1: 17-5/5-10/9-11-1939/15-1-1940.

the bronze figure of Aesculapius, found on 7th November 1939 in an 18th century excavation passage.

Three of the four *aediculae* quite clearly come from rooms which were predominantly used as bedrooms. We can cautiously assume the same setting for the fourth (cat.no. 30). What is certain is that they all served the private cult of the inhabitants. The *aedicula* in the Casa del Sacello di Legno also had a second function, with the lower part serving as a cupboard for household articles. The find of a bronze statuette in room 4 of the Casa del Tramezzo di Legno, likewise a bedroom,⁸³⁶ and of bronze statuettes of Mercury and Venus in a chest in a room on the first floor of the Casa Sannitica (which also contained the remains of a bed leg), further indicate that provision was made for the household cult in rooms which primarily served as bedrooms.⁸³⁷ There may also have been a wooden shrine in room 4 of the Casa del Tramezzo di Legno. Remarks in the written sources confirm the link between the household cult and the bedroom.⁸³⁸

In Pompeii there are several instances of shrines for the household cult in *atria* and *peristylia*. In general these are more lavish than those found in other rooms.⁸³⁹ S. Adamo Muscettola (1984, 10) makes a distinction between *aediculae* in formal rooms (*atria*, *peristylia*) and those in residential rooms. According to her, the former (which were usually part of the architecture and were built of plastered masonry) contained bronze statuettes of the official household gods, while the latter were usually only painted on the walls. As an example of figures from the former, we can cite the bronze statuettes in the Casa degli Amorini Dorati (VI 16, 7) in Pompeii.⁸⁴⁰ According to Adamo Muscettola (1984, 12 and 25-26) bronze figures are also found loose in what she terms 'secondary rooms', especially in bedrooms, usually without the presence of anything in which to place them.⁸⁴¹ She regards these bronze figures from bedrooms as being generally simpler in execution than those which stood in *aediculae* in *atria*. Perhaps we should imagine that they once stood in wooden *aediculae*, as in Herculaneum, which were lost at the time of their discovery.

T. Fröhlich has made a study of the paintings relating to household cults in Pompeii, in which he observes a concentration of paintings of domestic deities in non-formal rooms.⁸⁴² These would have been a cheap solution for the cults of slaves and servants, rather than for those of the family itself. Sometimes an especially fine shrine is found in an *atrium*, but Fröhlich thinks that in *atria* where these are absent the shrines could have been wooden or the figures could have stood loose on tables. The wooden shrines in private rooms in Herculaneum suggest that the views of Adamo Muscettola and Fröhlich should be qualified. Besides the two types of shrine which they identify - formal ones in *atria*, simple painted ones in service rooms - there existed, here at least, a wooden version. The bronze statuettes found in two of the Herculaneum *aediculae* and the suspicion that the bronze statuette of Aesculapius in the Casa del Salone Nero might have come from a third, suggest that bronze statuettes also stood in

⁸³⁶ See appendix 1: 27-4-1928 and cat.no. 1.

⁸³⁷ See appendix 1: 3 and 10-5-1928.

⁸³⁸ Petr., 29.8; Suet., Aug. 7.2: *inter cubicu lares* (between the bedroom Lares); Suet., Dom. 17: *curae larum cubiculi* (for care of the bedroom Lares). For a discussion of the household gods, see: Orr 1978, 1559-1575; Dubourdieu 1989, 94-120; Fröhlich 1991, 22-26.

⁸³⁹ Cf. Dwyer 1982, 114; As the only exception, Adamo Muscettola (1984, nota 17 with bibliography) mentions the find of a number of bronze statuettes in a household shrine in the kitchen of a villa in Boscoreale.

⁸⁴⁰ Cf. NSc 1907, 566-571; Adamo Muscettola 1984, 14-15 and figs. 3-7; Seiler 1992, 47 and Abb. 292, 294 and 296. Further examples of *aediculae* with bronze statuettes from the *atria* of houses in Pompeii are: Casa delle Pareti Rosse (VIII 6-7, 37): Adamo Muscettola 1984, 15-20 and nota 73 and figs. 9-16; house IX 7, 20: Adamo Muscettola 1984, 20-23 and figs. 17-19; house VII 15, 3: Adamo Muscettola 1984, 10, 24, nota 137, fig. 21.

⁸⁴¹ Examples of these are: from Pompeii IX 6, 5-7: Adamo Muscettola 1984, 25-26 and fig. 23; Pompeii II 2, 1: Adamo Muscettola 1984, fig. 24. Both were found in rooms opening on to the *peristylum*.

⁸⁴² Fröhlich 1991, 28-30.

shrines in non-formal rooms. Put another way, these finds prove that such statuettes were not necessarily loose figures placed without a shrine in bedrooms. Although it is generally accepted that the *atrium* was traditionally the centre of the household cult, it is now clear that facilities were also provided for it in private rooms, at least in Herculaneum in 79 A.D.. We can also conclude that the care which has been bestowed on these particular wooden *aediculae* must have emanated from *pietas* towards the gods rather than from ostentation or the desire to assert social status. The sacred atmosphere was intensified by giving *aediculae* pediments, a quintessentially cultic feature (see § 3.5.2).

Racks

The four surviving racks all stem from shops,⁸⁴³ and of these three were clearly used for storing amphoras. We can therefore assume that fluids, such as wine or olive oil, were sold in these shops. Other finds indicate that shop VI 12, in the period immediately preceding the eruption, was being used as a metal worker's workshop. He has presumably let the amphora rack (figs. 150-151), which clearly implies another function, remain where it was. The rack in shop V 12 (figs. 154-155) was still stocked by the remains of vegetable material, identified by the excavators as straw brooms.⁸⁴⁴ Other shop racks, now lost, were found in *Insula* IV 15-16 (Maiuri, 1958, 434). A find in Pompeii (house VII 2, 11) where glass pots and bottles containing paint were found on four shelves set in a niche, provides an example of a rack in a workshop.⁸⁴⁵

Besides shops and workshops, racks also occur in storerooms. One example comes from the first floor of the Casa d'Argo, where from January to May 1928 (see appendix 1) various wooden racks carrying foodstuffs in earthenware pots were discovered along with some wooden chests. Similar examples were found on the first floor of the Casa dello Scheletro,⁸⁴⁶ the Casa dei Cervi (in room 3 on the ground floor, with terracotta and glass objects),⁸⁴⁷ in room 7 of the Casa del Mobilio Carbonizzato⁸⁴⁸ and in the *Insula Orientalis* I 1a.⁸⁴⁹

Racks also stood in rooms close to kitchens and were used for storing kitchen equipment and supplies. Examples of this were encountered on the first floor of the Casa del Tramezzo di Legno⁸⁵⁰ and on the ground floors of the Casa della Gemma⁸⁵¹ and the Casa del Salone Nero (VI 13),⁸⁵² where some 50 wax tablets came to light on three shelves.⁸⁵³ All these racks have unfortunately been lost.

Chests

Various chests were found in Herculaneum. In some instances both the find circumstances and the contents are known. Several were found in storerooms, such as three examples on the first floor of the Casa d'Argo.⁸⁵⁴ One contained a glass plate and some food, a second (with iron locks) again food and a third, smaller chest, ten silver coins. The presence of wooden racks

⁸⁴³ Cat.no. 31 (shop V 6); cat.no. 32 (shop/workshop VI 12); cat.no. 33 (shop/house *Insula orientalis* II 9); cat.no. 34 (shop V 12).

⁸⁴⁴ See appendix 1: 22-3-1939 and 11-4-1939.

⁸⁴⁵ Cf. Fiorelli 1873, 30.

⁸⁴⁶ See appendix 1: 9-6-1927.

⁸⁴⁷ See appendix 1: 24-11-1930.

⁸⁴⁸ Cf. Maiuri 1958, 472 nota 56: rack with terracotta, bronze and glass vessels.

⁸⁴⁹ See appendix 1: 13-3-1940: rack in storeroom with amphoras and terracotta and bronze vessels. An example from outside Herculaneum from the 3rd century A.D. comes from Kaiseraugst-Schmidmatt, cf. Furger 1989, 266-267.

⁸⁵⁰ In May 1869, see appendix 1.

⁸⁵¹ Room 3 (see appendix 1: 22, 23 and 30-4-1934): rack with terracotta vessels in a room next to the kitchen.

⁸⁵² Room c next to the kitchen, see appendix 1: 2-6-1939.

⁸⁵³ Placed along the north side of the *porticus*: see appendix 1: 16-8 and 29-9-1939.

⁸⁵⁴ January to May 1828: see appendix 1.

holding food in terracotta vessels indicates that these were storerooms. At the end of September 1828 another chest containing flour was found here.⁸⁵⁵ Although we know nothing about the find circumstances of the only surviving chest from Herculaneum (cat.no. 41; fig. 167), we do know its contents. It was a kind of flour or cake.⁸⁵⁶ Sometimes the presence of chests may indicate a storeroom close to a dining room. Examples of this were a chest on the first floor of the Casa dei Cervi⁸⁵⁷ and one in the *Insula Orientalis* II 7, also on the first floor.⁸⁵⁸

On various occasions chests were found in shops, the contents indicating that they were used for storing merchandise. In two cases the goods appear to have been only recently delivered. In March 1938 (see appendix 1) a small chest containing 19 terracotta lamps came to light on the ground floor of shop V 17,⁸⁵⁹ while glassware was packed in another chest found in a shop on the *Decumanus Maximus*.⁸⁶⁰ A similar find was made in Pompeii: a chest which contained 90 pieces of *terra sigillata* from southern Gaul and 37 terracotta lamps.⁸⁶¹ These chests may well have been made in the place from which the goods were dispatched.

Some chests were found with varied contents, such as one on the first floor of the Casa Sannitica (V 2) in which were two bronze statuettes (one of Mercury, the other of Venus) and a terracotta figure of a seated woman. A bed leg found in the vicinity argues the case for a bedroom.⁸⁶²

On a number of occasions wax tablets have turned up in chests. Two instances involve small rooms, one on the first floor of the Casa del Sacello di Legno⁸⁶³ and the other on the first floor of *Insula* V 22 (room D).⁸⁶⁴ The presence of a bed in each case suggests that these were bedrooms doubling as workrooms or studies.⁸⁶⁵ The room in the Casa del Sacello di Legno also contained a bench (cat.no. 24) and that in V 22 an oil lamp. Other examples were found on the first floor of the Casa del Bicentenario (V 15).⁸⁶⁶ The well-known group of wax tablets from the Casa di L. Caecilius Iucundus in Pompeii (V 1, 26) comes from a similar context.⁸⁶⁷

⁸⁵⁵ The chests in Pompeii often contain crockery: VIII 5, 9, *tablinum*: NSc 1881, 300 (contents: plates and lamps); Pompeii I 6, 4, *atrium*: NSc 1913, 33-34 (contents: terracotta and glassware); Pompeii, Casa di Trebius Valens (III 2, 1), *cubiculum* e: NSc 1915, 340 (contents: bronze vessels, silver spoons, agate *unguentarium* and other valuables); Pompeii III 2, 2, first floor: NSc 1915, 426-427 (contents: bronze, terracotta and glassware [a great deal], iron lamp); Pompeii, Casa dei Quadretti Teatrali (I 6, 11), *atrium* (3 cupboards): NSc 1929, 420-422 (contents: bronze vessels); Boscoreale, Villa di Contrada Pisanella, *peristylum*: Pasqui 1897, 409-410 (contents: terracotta, bronze and glass vessels).

⁸⁵⁶ See appendix 1: 1-8-1961.

⁸⁵⁷ Contents: terracotta crockery, especially eating and drinking vessels, terracotta lamps, bone objects, see appendix 1: 21-10-1930.

⁸⁵⁸ See appendix 1: 14-2-1933. Contents: terracotta lamp, terracotta mug and glass bottle; cf. for the glass: Scatozza Höricht 1986, cat. 152, 228 inv. E 1163, 1153; she mistakenly thinks that this chest was found on 2-11-1933; for the jewelry: cf. Scatozza Höricht 1989, 75, cat. 148 inv. E 1165; further contents: terracotta crockery (inv. E 1154-1161 and E 1168) and dice (inv. E 1164 and E 1166). Outside Herculaneum chests were sometimes filled with assorted household articles: Boscoreale, Villa di Contrada Pisanella, room before the *torcularium*: Pasqui 1897, 476-478: contents: textiles, glassware, bronze toilet articles, bronze candelabrum and bronze vessels; Boscoreale, Villa di Contrada Pisanella: chest with clothing, glass bottles and bronze toilet articles, cf. Pasqui 1897, 477-478.

⁸⁵⁹ Conticello De Spagnolis/De Carolis (1988, 69, cat. 46, inv. E 1911) give the contents of this chest as a lamp. According to them the date of the find would be 14-4-1938, but this is not correct.

⁸⁶⁰ North-east side of the *Decumanus Maximus*, found on 8-8-1961: packed in a chest and wrapped in straw and textile and bearing the stamp of Publius Gessius Ampliatius; Scatozza Höricht 1986, gives the contents: see her catalogue nos. 3-10, 20-21, 26-31, 43, 56-63, 66, 67-68, 74-75, 76, 93, 94, 98, 103, 114-115, 123, 143, 150, 209, 223-225, 241, 256.

⁸⁶¹ Found on 4 October 1881 in house VIII 5, 9; cf. NSc 1881, 300-301, 322 and NSc 1882, 275-276; Atkinson 1914.

⁸⁶² See appendix 1: 3 and 10-5-1928.

⁸⁶³ See appendix 1: March and April 1934.

⁸⁶⁴ See appendix 1: 3-9 to 16-11-1937: contents of the room: bed (cat.no. 9), precious stones, three chests with wax tablets, terracotta lamp.

⁸⁶⁵ Cf. Maiuri 1946, 375.

⁸⁶⁶ Room to the east of the *tablinum*; see appendix 1: 10-10-1938: the chest contained c. 150 wax tablets. Cf. De Kind 1990, 196-202, 263.

⁸⁶⁷ Cf. Mau 1908, 489; Maiuri 1946, 375; Pugliese Carratelli 1950, 274-275; Andreau 1974, 13-14; these were found on 3 and 5-7-1874 on the first floor, to the north of the *peristylum*.

Valuables such as jewelry and money were also stowed away in chests, sometimes in combination with crockery. Examples come from the *Insula Orientalis* I 1a,⁸⁶⁸ from the garden of the Casa del Rilievo di Telefo⁸⁶⁹ and from the first floor of house V 11 (with 562 silver coins).⁸⁷⁰

From the first floor of *Insula* V 22 came another chest with mixed contents: a bronze statuette of Venus, glass and terracotta vessels, gold and silver jewelry and glass paste dice and jewelry.⁸⁷¹ Even more varied were the objects in a chest found in room 3 of the Casa dei Due Atri (VI 28-29):⁸⁷² two bronze vessels, a bronze bell, wax tablets, two pouches with coins, two silver spoons, one bronze spoon, glass, condiments, grain and a wooden box. This find was combined with those of a bed and a second chest, which was empty.

The glassware found in Herculaneum during the last century is published by L. Scatozza Hörich (1986), who also describes the jewelry and precious stones stored in the Magazzino Archeologico (Scatozza Hörich 1989). The precious stones which have been transferred to the Museo Nazionale in Naples are dealt with by U. Pannuti (1983A). These writers mention several other chests, found on the upper floor of the Casa del Colonnato Tuscanico,⁸⁷³ on the ground and first floors of the *Insula Orientalis* II 10,⁸⁷⁴ on the first floor of the Casa del Bel Cortile (V 8),⁸⁷⁵ and on a first floor in *Insula* V on the westside of *Cardo* V, probably house V 26.⁸⁷⁶ Various jewels were found in two chests lying between the skeletons in the vaulted cliffs above the beach.⁸⁷⁷

⁸⁶⁸ See appendix 1: 14 and 15-1-1935, the contents of the chest included two gems, a shell and glassware, bronze coins and a small bronze plate with inscription (a name?); for the glassware in this chest, see Scatozza Hörich 1986, cat. 35, 39, 53, 64 (inv. E 1326, 1329, 1226, 1325); cf. for gems: Scatozza Hörich 1989, 112 (inv. E 1323-1324 and E 1331-1333); Pannuti 1983A: cat. 82, 128, Naples, Museo Nazionale inv. 155865, 155864 respectively.

⁸⁶⁹ See appendix 1: 15-5-1935: parts of a string of paste beads; cf. Scatozza Hörich 1989, 87, cat. 196 (inv. E 1358).

⁸⁷⁰ See appendix 1: 20-8-1938. The combination of valuables and crockery is also encountered in chests in Pompeii: Casa dei Quadretti Teatrali (I 6, 11), *atrium*: NSc 1929, 415-420 (contents; bronze statuette of Apollo, glass, bronze and silver vessels); Pompeii, Casa del Menandro (I 10, 4), cellar: Maiuri 1932A, 219 and 246: two chests with silver service; Oplontis, Villa B, coming from the first floor, above room 15: D'Ambrosio 1987, 30 and fig. 4 (contents: jewelry, coins, glassware, toilet articles),

⁸⁷¹ See appendix 1: 1-9-1937; for the glassware, see Scatozza Hörich 1986, cat. 159 (inv. E 1752, E 1747), who mistakenly gives the find spot as the Casa del Bicentenario; for the jewelry: Scatozza Hörich 1989, 54: two silver pendants, together with a ring with gem (inv. E 1754), cut stones (inv. E 1755, 1762, 1768), a piece of gold jewelry (inv. E 1753); bronze statuette of Venus (inv. E 1756) and glass vases (inv. E 1747 and 1752); for the gems, see Pannuti 1983A: cat. 34, 72, 85, 88, 121, 156, 160, 203, 227 Naples, Museo Nazionale, respectively inv. 158856, 158861, 158859, 158853, 158855, 158854, 158857, 158860, 158858; Scatozza Hörich 1989, 113, inv. E 1753-1756 and 1762-1768 (who again mistakenly gives the Casa del Bicentenario as the find spot).

⁸⁷² See appendix 1: 16, 17, 22-11-1939; for the glassware, see Scatozza Hörich 1986, cat. 201 (inv. E 2012).

⁸⁷³ Found on 17-6-1966; for the glass, see Scatozza Hörich 1986, cat. 13, 99, 88, 89 (inv. E 2886-2890).

⁸⁷⁴ Found on 3-7-1936: contents: jewelry (inv. E 1582), 30 silver coins (inv. E 1571-1574), two bronze coins (inv. E 1569-1570), four glass *unguentaria* (inv. E 1576); for the glass, see Scatozza Hörich 1986, cat. 169-171, 195; for the jewelry, see Scatozza Hörich 1989, 56-67, 76, 84, 91 and 92, cat. 79, 98-120, 144, 150-161, 190-197; jewelry and gems were also found loose on the floor: (inv. E 1582-1587, E 1591, E 1593, E 1594-1598, E 1605 and E 2582); for the gems, see Pannuti 1983A, cat. 83, 90, 130, 153, 155, 181, 249, 340, 348 (Naples, Museo Nazionale, respectively inv. 155878, 155884, 155883, 155877, 155876, 155881, 155882, 155886, 155885); Scatozza Hörich 1989, 112 Naples (inv. E 1569-1574 = Museo Nazionale inv. 155864, 155873-155875). For the chest on the first floor, see Pannuti 1983A, cat. 49, 128, 147 (Naples, Museo Nazionale respectively inv. 155871, 155869, 155870). It is however very doubtful whether this last reference does concern the first floor, since 23-7-1936 is given as the find date. At that time excavation of rooms on the ground floor was already in progress.

⁸⁷⁵ Found on 18-3-1938: for the glass, see Scatozza Hörich 1986, inv. E 1896; for the jewelry, see Scatozza Hörich 1989, 75, cat. 145 (inv. E 1897; parts of a string of beads). She also mentions two terracotta vases (inv. E 1898-1899).

⁸⁷⁶ Found on 7 and 8-8-1933, for the glass, see Scatozza Hörich 1986, cat. 172, 175, 198 (inv. E 1127, 1130, 1129); the find spot is here given as the first floor of V 22, but there were no excavations there on these dates. Work was actually being carried out in V 26.

⁸⁷⁷ Cf. Scatozza Hörich 1989, 27-68: room 12 at the beach, all found on 5 May 1983 in a chest: cat. 1-2, 4-10, 12, 15, 30-32, 46-47, 52, 58, 68-91, 122-128, 169-189, 198-199; in the same chest there were bronze and silver coins, four *unguentaria* and a bronze jar; Scatozza Hörich (1989, 45, cat. 37-38) mentions a second chest nearby; this would have been found on 5-1-1983 and contained two bracelets and some silver and bronze coins.

Chests and their contents are also mentioned by antique writers, who tell us that they were used, amongst other things, for storing valuables and coins.⁸⁷⁸ Such pieces will sometimes have had metal fittings, protecting the contents from theft and looking very impressive (see fig. 28 and § 4.7.1).⁸⁷⁹ Further uses, according to the written sources, were storing clothes,⁸⁸⁰ foodstuffs,⁸⁸¹ and scrolls.⁸⁸² Very few textiles have survived in Herculaneum, so we do not know for certain where such material was stored.

Possible alternatives to chests were the *capsa* and the *scrinium*, in which according to antique texts scrolls and archive records were stored. There is one reference in Martial to a *capsa* used for storing fruit.⁸⁸³

5.6 Functional categories

It is quite clear from the previous section that furniture was widely used in the daily life of Herculaneum. We will now move on to review the range of activities which involved furniture and examine the various combinations of furniture which occur in the town. We will concentrate on the most important activities or 'functional categories' for which furniture was used; namely, sleeping, eating, storage, religion, formal display, conversation, working, studying and relaxation.

The form of bed used for sleeping varied according to the age of the user. There were thus children's beds and beds for adults. The material from Herculaneum does not allow us to distinguish between beds for 'the family' and those for the servants. We can identify certain rooms as bedrooms, mainly via the architecture, the decoration and the presence of a bed, but such rooms seem often to have been used for more than just sleeping. This can be deduced from the other finds made in them. Sometimes the functional category 'sleeping' is combined with eating, working/studying or religion (the household cult).

As far as is known, people always reclined upon couches whilst eating. The dining rooms in Herculaneum seem to have commonly held two couches (*biclinia*). We know of five examples. There is evidence for only one *triclinium*, the dining room with three couches which is so well known from the antique texts (this is room 11 of the Casa dell'Atrio Corinzio). Three-legged tables were another feature of dining rooms (fig. 32). The find circumstances also suggest that some *biclinia*, although primarily dining room furniture, were used to sleep on overnight. A clear example is the *biclinium* in the Casa a Graticcio (cat.no. 5). Such a combination of functions would have helped to save space.⁸⁸⁴ For resting, after the meal for example, people could choose between the couch in the dining room and the greater privacy of a single bedroom.

⁸⁷⁸ Appianos, Bellum civile 4.44: chest with metal fittings in the largest room of the house, for storing valuables and books; Cic., Top. 16; Cic., Q. Rosc. 29; Dig. (Paulus) 1.15.3.2; Dig. (Ulpianus) 19.2.19.5; Fest. 14-15 L; Gregorius Turensis, Historia 2.40; Hor., S. 1.6.117; Isid., Orig. 20.9.3; Iuv. 10.25; Iuv. 11, 26-27; Iuv. 14.259; Mart. 2.44.7-9; Mart. 5.42.1-2; Naev., Com. 108-109; Pl., Aul. 823; Plin., Nat. 33.12; Sen., Ben. 4.6.1; Stat., Silv. 2.2.150-152; Var., L. 5.128.

⁸⁷⁹ See also § 4.7.1 and finds in Pompeii IX 5, ?, *atrium*: NSc 1879, 101-102; Pompeii IX 7, ?, *atrium*: NSc 1881, 93 (valuables and coins); Pompeii I 6, 4, *tablinum*: NSc 1913, 29-31 (contents: glass service and jewelry); small chests for storing valuables: women's graves in Regensburg, cf. Dietz 1979, 324 and 326.

⁸⁸⁰ Cato, Agr. 11.3: *arcam vestiariam* (clothing chest); Cic., Off. 2.7.25; Gregorius Turensis, Historia 10.16; Hieronymus, Epistolae 22.32; Hor., S. 2.3.118-119; Isid., Orig. 20.9.3; Mart. 2.46.4; Plin., Nat. 33.12; Sen., de Tranquillitate Animi 1.5.

⁸⁸¹ Col. 12.47.5 (apples); Dig. (Paulus) 16.3.26.

⁸⁸² Hieronymus, Commentarium in Mattheum 23.5; Hor., Ars 330-332 (and Porphyrio, ad l.).

⁸⁸³ *Capsa*: for archive material: Cic., Div. Caec. 51; Hor., Ep. 264-270; for scrolls: Stat., Silv. 4.9.20-23; for fruit: Mart. 11.8.3; *scrinium*: for scrolls: Catul. 14.18-20; Mart. 1.3.1-2; id. 4.33.1-2; id. 6.64.8-10; id. 14.37; Ov., Pont. 1.1.23-24; Plin., Ep. 7.27.4; Plin., Ep. Tra. 10.65.3; Porphyrio, ad Hor. Ep. 2.1.113.

⁸⁸⁴ Cf. Jahn 1990, 13 and Fetten 1985, 230.

Various types of furniture were provided for storing household articles, although other places in the house (such as the dead ends of passageways and the spaces under stairs) could serve the same purpose. Storage furniture proper can be divided into three groups: cupboards, racks and chests. Cupboards were used mainly for items in daily use. In Herculaneum they are to be found in bedrooms, dining rooms and kitchens. In Pompeii they sometimes appear in *atria* and *peristylia*. There is no evidence for the existence of food cupboards. The fact that more wooden cupboards than chests have been found in living rooms suggests that cupboards were considered to be more practical here and possibly more beautiful.

Chests, on the other hand, were used in storerooms for storing foodstuffs and crockery. Some were strengthened with iron locks and fittings and used as strong boxes to store valuables. Chests containing wax tablets, which suggests that they were used to hold household records, stood in a number of bedrooms. In one bedroom there was a chest containing statuettes of the gods, indicating that the room was also used for the household cult. It seems that chests were used in houses either for storing items which were not required on a daily basis, or for storing provisions in storerooms. Racks were also installed in storerooms and in other service rooms.

In shops chests were used to store merchandise. Being easy to move, they were probably also used for transporting goods. Such chests were presumably made in the places from which the goods came. Racks were also used in shops, both to store merchandise and (probably) to display it.

Household shrines, when they are made of wood, can also be regarded as storage furniture. The clearest example was found in the Casa del Sacello di Legno (cat.no. 29), where the lower section served as a cupboard. The upper section, in which stood statuettes of the gods, served the family's household cult just like the other *aediculae* in Herculaneum. The surviving examples all seem to come from bedrooms, which suggests that (in these rooms at least) the household cult should be regarded as a purely private affair. These shrines were often beautifully made and seem to have occupied a position midway between the formal *aediculae* containing costly statuettes which are found in Pompeiian *atria*, and the painted versions which we find on the walls of service rooms.

One bedroom contained a bench (cat.no. 24), clear evidence for study or administration. The wax tablets found in nearby chests support the case for believing that the room had a dual function. Chests with wax tablets have been found in combination with beds in other rooms and confirm the impression given in antique texts that beds may have been used for study as well as for sleeping.

The majority of Herculaneum's wooden furniture was neither formal nor ostentatious. It was ordinary furniture for everyday use. However, the form and finish of several pieces suggest that they were decorative as well as practical. These are five couches/beds (cat.nos. 1, 6, 7, 8 and 13), all the tables, the stool (cat.no. 23), all the *aediculae* and one small cupboard (cat.no. 40). With one exception, the couches all come from what appear to be the smartest rooms in the houses concerned. These were probably dining rooms in which guests were received. For the exception, the bed in the Casa del Tramezzo di Legno (cat.no. 1; figs. 33, 35), the reason for its costly appearance is not immediately apparent. Perhaps we should here be imagining the bedroom of the master of the house. The tables were all used in dining rooms and here again the care bestowed on them suggests that they too were designed to impress. We cannot make any such judgements about the stool (cat.no. 23; figs. 123-126) or the small cupboard (cat.no. 40; fig. 166) because their find circumstances are not known. Finally, although the quality of the *aediculae* gives the impression that they are show pieces, the fact that they were found in private rooms suggests otherwise. The explanation may simply lie in the *pietas* of the inhabitants towards the gods.

There are very few examples in Herculaneum of really formal furniture (pieces in marble

and bronze) for which the exact find spot is known. The dearth of documentation is due to the fact that much of this material was found during the 18th century shaft excavations, when little attention was given to noting the precise location of finds. Thus the excavation journals frequently mention bronze furniture appliquéés which must once have been part of more expensive decorative pieces (see § 4.7.1). Perhaps such furniture once stood in the formal rooms of large houses like the Casa dei Cervi.⁸⁸⁵ The same may have been true of marble furniture, as Moss' (1988) conclusions on the use of marble tables would seem to suggest. We would not expect to find wooden furniture in such places. It does sometimes appear in the formal rooms of much smaller houses, such as room 8 of the Casa del Mobilio Carbonizzato (cat.nos. 7 and 15; fig. 32) or room a of the *Insula Orientalis* II 10 (cat.no. 13; figs. 87-89). Most of it comes, however, from the 'secondary' rooms of larger houses and could equally have belonged in any of the rooms of the smallest houses. All the preserved wooden furniture for which the find circumstances are known comes from static rooms, while the marble tables were probably only found in formal dynamic ones.

Different functional categories of furniture could sometimes occur next to each other in the same room. Such combinations indicate a multi-functionality based on the economic use of space. This is especially prevalent in small living units.

5.7 Furniture as evidence for the internal division of houses

If we now compare the picture emerging from the study of this furniture with traditional theories of the Roman *domus*, we will find it difficult to draw firm conclusions about the composition of the *familiae* in the houses of Herculaneum purely on the basis of a functional analysis of the furniture. The surviving material is too socially diverse (including as it does pieces from all levels of the population) and moreover can only be interpreted in combination with all the finds made in the vicinity. This would require a large group of specialists who would have to analyse all the finds in relation to the architecture and decoration of each individual house. Although furnishings offer some clues as to the wealth and social status of the proprietor, they tell us little or nothing about the age, sex and status (freeborn, freed, slaves) of the individual inhabitants. It is not even possible to estimate the number of people who lived in a given house from the furniture which it contained.

What then can be said on the basis of furnishing? Let us first take the large *atrium* and *atrium-peristylum* houses in Herculaneum (and those in Pompeii). Here we can certainly draw some conclusions about the arrangements in the least intimate rooms, the *vestibulum*, the *fauces* and the *atrium*. These generally had a formal character and their architecture and decoration were a reflection of the social status of the *patronus*.⁸⁸⁶ The emphasis here lay upon the decoration of the floors, walls and ceilings. Any furniture and sculptures present were usually symbols of status and contained little wood, but a lot of marble and bronze. The marble table which stood in many *atria* in Herculaneum and Pompeii was in fact derived from an older and simpler form. Varro tells us that it had a single support and stood near the cistern holding vessels for carrying water.⁸⁸⁷ The purely formal function of these tables as they are found in

⁸⁸⁵ We find an indication of the value of furniture with bronze appliquéés in Volubilis, where a couch from a *triclinium* in 'la maison au cortège de Venus' is repaired by a local bronze worker (Thébert 1985, 333).

⁸⁸⁶ Cf. Wallace-Hadrill 1990, 171.

⁸⁸⁷ Varro, L. 5.125: *Altera vasaria mensa erat lapidea quadrata oblonga una columella; vocabatur cartibulum. Haec in aedibus ad compluvium apud multos me puero ponebatur et in ea et <cir> cum ea <m> aenea vasa: a gerendo cartibulum potest dictum.* (A second table for crockery was made of stone, rectangular with a single support, called a *cartibulum*. When I was young this was placed next to the *compluvium* in many houses, with bronze vessels on and around it: the term *cartibulum* is possibly derived from *gerere* [to bear]); cf. Gloss. 4.30.3 and id. 5.595.36. The fact that Varro speaks in the past tense and

many *atria* can be deduced from the fact that they did not generally stand in the immediate vicinity of the cistern. The very material, marble, suggests a formal function. R. Cohon (1985, 1 and 104-105) observes the same phenomenon in marble furniture as P. Zanker (1979) had earlier discerned in domestic architecture and decoration: middle class imitation of the furniture of the elite, who were in turn imitating that of Hellenistic palaces. This could explain the great differences in quality (and presumably of cost) in the formal furniture found in Herculaneum and Pompeii; these pieces did indeed reflect the true status of the *patronus*. The strong box with bronze or iron fittings which sometimes stood in the *atrium* might appear to be an exception to the formality of the other furnishings, but this too can be seen as a show piece. Its size and decoration gave the visitor an idea of the wealth of the *patronus*, which was thus almost literally being displayed. The marble furniture and statues in gardens were also purely formal, as were pieces like the bronze dumb waiters found in *triclinia* (and occasionally in *atria*).⁸⁸⁸ An example in Herculaneum is provided by the garden of the Casa dei Cervi, whose statuary and garden furniture have been reconstructed by Tran Tam Tinh (1988, 98). We might even say that the marble and bronze pieces in formal rooms were not really furniture at all, but should rather be regarded as sculpture.

Marble and bronze furniture are found almost exclusively in *atria* and *peristylia* and their adjoining rooms (*alae*, *tablina*, *triclinia*),⁸⁸⁹ wooden furniture almost never. While this may have been because wooden pieces were considered insufficiently grand, there may also have been a practical reason. Wood would not respond well to the rain and damp which effected these relatively open rooms.⁸⁹⁰ There were indeed wooden couches in the dining rooms of the very best houses but these were covered with bedding and only small areas of them would have been visible. It was precisely these parts, the legs and the *fulcra*, which were usually covered in bronze appliqué. The prestige of such pieces seems not to have lain in the wood, but in the addition of other materials.⁸⁹¹ By contrast, even in the most luxurious dining rooms, the table was probably always made of wood so that it could be easily moved.

A number of the pieces for which the find circumstances are known come from smaller houses with few or no 'public' rooms with a formal function. The limited space available in such houses meant that many rooms would have been used for different activities at different times of day. We can gather this from the finds made in the two apartments forming the Casa a Graticcio, which point to more than one function in each room.⁸⁹² Occasionally, it seems, some static rooms did have only one function, as in four dining rooms,⁸⁹³ all of them admittedly in relatively large households. Two of these contained the remains of couches with bronze fittings. Similar pieces may also have graced room 19 of the Casa dell'Alcova, but we cannot be sure because the couch legs are not described in the excavation reports. The couch in the Casa del Mobilio Carbonizzato (cat.no. 7) raises a slightly different problem, since it is made entirely of wood. The quality of the craftsmanship, however, is compatible with a respectable dining room.

For several small houses in Herculaneum we have the complete inventories. These reveal a relatively large quantity of wooden furniture. Again, we see this most clearly in the Casa a

mentions his youth indicates that this table had lost this particular function in the course of the 1st century B.C. To use the term *cartibulum* for the later and purely formal marble version (as is common practice) is therefore incorrect.

⁸⁸⁸ For dumb waiters, see Moormann 1988A, 148-150 and afb. 5; Conticello/Varone 1990, 256-257, cat. 180.

⁸⁸⁹ Dwyer 1979, 64.

⁸⁹⁰ See also Pernice 1932, 1.

⁸⁹¹ Cf. Eames 1977, 230, who observes the same phenomenon in medieval furniture.

⁸⁹² Clarke (1991, 257) thus characterized the house as 'a cheap high-density tenement'.

⁸⁹³ Room 8 of the Casa del Mobilio Carbonizzato; room 11 of the Casa dell'Atrio Corinzio; room 19 of the Casa dell'Alcova; room 7 of the Casa di Nettuno ed Anfitrite.

Graticcio, where the rooms were filled with cupboards and beds. In the larger houses there was also a lot of furniture but the wooden pieces were less conspicuous. They were stowed away, as it were, in the static parts of the house, the private and service rooms. Dynamic rooms, like the *atria*, *peristylia*, halls and gardens were relatively empty. This seems to have misled archaeologists, who have generally portrayed the Roman house as surprisingly scantily furnished.⁸⁹⁴ The wooden furniture found in Herculaneum demonstrates that this was only true of the formal rooms of the larger houses.⁸⁹⁵ Their more intimate rooms were actually crammed full, as they were in all the other houses of the excavated town. The same was true in Pompeii and thus may have been a general characteristic of Roman houses.

The conventional view that the Roman house was scantily furnished must now be qualified. Small households without formal spaces contained a lot of wooden furniture in all rooms, while in larger households there is a distinction to be made between the more 'static' private and service rooms, which held a lot of wooden furniture, and the 'dynamic' formal rooms, which held almost none. Unlike today, space in the formal rooms of large Roman houses was not delineated by furniture but by the floor and wall decorations. This feature can again be observed in both Herculaneum and Pompeii and may therefore have been more widespread. Marble and bronze furniture did appear in these formal rooms but, as has been said, might be better regarded as sculpture since it served no practical function. Wooden and marble pieces were not interchangeable, thus every house would have required ordinary wooden furniture.

The more intimate the room, the greater the presence of wooden furniture. In formal rooms it almost never appeared. We can thus conclude that wooden furniture was not generally a status symbol in itself. How then can we describe its place in Roman domestic life? In the archaeological literature the idea persists that wooden furniture in Roman houses was purely utilitarian and only placed where it was actually needed. Often, of course, wooden pieces did serve practical everyday needs and their form was adapted accordingly. But some wooden furniture goes far beyond the merely practical, notably the beautifully made household shrines which stood in some of the intimate rooms on the upper floors of Herculaneum houses. It was piety rather than ostentation which lay behind such pieces. The term 'utilitarian' as a description of Roman wooden furniture is therefore too limited. It is surely better to speak of 'functional' furniture, since the function of a piece of furniture, in the Roman period as well as today, significantly determined its form.

5.8 Conclusion

The distinction *propria* : *communia* which Vitruvius (6.5.1-3) uses in describing the internal division of Roman houses applies only to large households where formal rooms occupied a relatively large proportion of the house. At first sight, current theories about the *domus* and the internal structure of Roman houses are not helpful in Herculaneum, because many of its houses diverge from the 'standard' forms (i.e. the *atrium* house and the *atrium/peristylum* house). Indeed, many of the smaller households belong to the group to which Vitruvius refers only in disparaging terms. We have therefore adopted another distinction (static : dynamic) which can be applied to all types of house. Using this model, we find that the wooden furniture in

⁸⁹⁴ Cf. Veyne 1985, 303.

⁸⁹⁵ For this see § 1.3. We can also add: Overbeck/Mau 1884, 423: 'Es ist nämlich eine Tatsache, dass der Hausrath der Alten ungleich einfacher und weniger mannigfaltig war, als das unsere, indem namentlich die vielerlei Schränken und Commoden, die unter wechselnden Namen und Bestimmungen unsere Häuser füllen, als Mobilien fast ganz fehlen, und entweder durch eingetieften oder angehängte Wandschränke oder durch kofferartige Kasten ersetzt wurden.' Blümner 1885, 29: 'Einige Sitzmöbel, Ruhelager und Betten, Tische und etwa daneben noch in bescheidenen Dimensionen sich haltende Truhen oder Kästen, das macht das Mobiliar des Griechen wie des Römers aus.' Cf. Maiuri 1932A, 420; Mastroberto 1992, 145.

Herculaneum was generally placed in the static rooms.

We can now conclude that wooden furniture was almost never placed in a room to display the social status of the owner, unlike bronze and marble tables. The exception is provided by dining tables, which were clearly ornamental pieces but were made of wood so that they could be easily moved. The other type of furniture upon which great care was bestowed was the *aedicula*, the household shrine. In this case it was *pietas* towards the gods which explains the quality of the surviving examples. Most wooden furniture, however, was chiefly of practical use in the daily lives of the people of Herculaneum.

CATALOGUE

THE WOODEN FURNITURE FROM HERCULANEUM

This catalogue covers all the surviving wooden furniture from Herculaneum. The pieces are to be found either *in situ* or at the Magazzino Archeologico (the site workshop and storeroom). It is very unlikely that there are any original pieces preserved elsewhere. The obvious place to look would be the Museo Nazionale in Naples, but all the wooden items on display there are modern reconstructions. There are metal appliques from couches and chests which originally came from Herculaneum in various museum collections, but since these are not wooden finds they fall outside the scope of this study (see § 2.1).

The description of each piece follows a standard inventory model which is set out below. There are various headings, each of which has its own code. If a heading is not applicable, the code is omitted from the text.

The catalogue was put together during the 1980's and reflects the situation at the end of 1993. Changes have inevitably occurred since then, but only when these are fundamental (i.e. new restorations or reconstructions) have they been incorporated into the catalogue. The general deterioration of the furniture since 1990 is not recorded. Reference material is not included. For this we refer the reader to the discussion of individual pieces in Chapter 3.

Measurements are usually given in millimetres, in accordance with modern practice. Centimetres are only used when more precise measurement was not possible.

During research by the department of Classical Archaeology at the Catholic University of Nijmegen it emerged that the arrow indicating north in Maiuri's (1958, *passim*) orientation for Herculaneum is inaccurate. This discovery notwithstanding, the existing indications of wind direction are maintained in order to prevent confusion.

The numbering of rooms is also taken from Maiuri (1958). For a plan of the Casa del Colonnato Tuscanico, please refer to the publication of this house by M.G. Cerulli Irelli (1974, fig. 1). A plan of the Collegio degli Augustali can be found in G. Guadagno 1983, 163.

References to the excavation reports can be checked in appendix 1 against the relevant dates. Occasional reference is made to the card index in the Magazzino Archeologico at Herculaneum, where the finds are briefly described. This is indicated thus: *Schede*.

The following abbreviations are used in the catalogue:

inv. = inventory number
(l.) = left
(r.) = right
(u.) = underside
(t.) = top
(f.) = front
(b.) = back
(c.) = centre
H. = height
L. = length
W. = width/breadth
D. = depth
Diam. = diameter
max. = maximum
min. = minimum
pres. = preserved

INVENTORY MODEL

1. NAME; REFERENCE TO PHOTOGRAPH AND/OR DRAWING

2. EXTERNAL CIRCUMSTANCES

- 2.1. Find spot
 - 2.1.1. Number and (where applicable) name of the building
 - 2.1.2. Number of the room (with source) and compass orientation of the wall against which the piece was found
 - 2.1.3. Function of the room
- 2.2. Date of find
- 2.3. Specific features of the find circumstances (e.g. other finds)

3. THE PIECE

- 3.1. Present location and inventory number (if known)
- 3.2. Detailed description
- 3.3. Technique
 - 3.3.1. Material (with evidence)
 - 3.3.2. Original treatment
 - 3.3.3. Non-wooden elements
 - 3.3.4. Joints
- 3.4. Present condition (1990)
 - 3.4.1. Missing elements
 - 3.4.2. Modern reconstruction
- 3.5. Measurements
 - 3.5.1. Main dimensions
 - 3.5.2. Detailed measurements

4. DESCRIPTION IN THE EXCAVATION REPORTS

5. BIBLIOGRAPHY

BEDS AND COUCHES

1

1. BED IN WOOD AND BRONZE, figs. 33-36.

2.1.1. III 11, Casa del Tramezzo di Legno.

2.1.2. Room 4 (Maiuri 1958, 208 fig. 162); south wall.

2.1.3. Bedroom.

2.2. 27-4-1928.

2.3. The room is situated on the south side of the *atrium*. It has a floor in *opus signinum*, walls with a black socle and a monochrome black panel decoration in the main zone (central *aedicula* and animals) in Third Style. There was a closable door in the north wall but no windows. Bronze statuettes, a weight, beans and terracotta and bronze objects were found in the room.

3.1. In situ. Inv. no. of part of the back board: E 392.

3.2. Of the four legs, only the right-hand front leg has survived largely intact (fig. 34). It consists of an iron rod, threaded through a circular wooden core (modern), around which antique bronze elements are fitted. The lowest of these is the base, which has a rectangular bottom and sides shaped like two stylized animal claws placed back to back. It is closed at the front and open at the back. A round hole in the top took the iron rod which supported the bedframe. Above the base there are five circular elements with various shapes.

The legs at each end of the bed were originally linked in pairs by stretchers. These were fitted into the open backs of the bases. Fragments of one of these stretchers are preserved at the right-hand end of the bed. Both sides of this stretcher carry the same moulding as the bronze base. It is flat at the top. Fragments of the left-hand front leg and the right-hand rear leg are also preserved. The legs once supported a rectangular bedframe composed of four rails.

The rear side-rail of the frame runs the full length of the bed, while the front side-rail is fitted between the two cross-rails. The rails meet in the corners with mortise-and-tenon joints. The forward-facing corners are strengthened with bronze brackets, which also had a decorative function (figs. 34, 35 F). These have a right angled U-shaped section and fit around the wood. They are not mitred at the corner: the front piece runs on and the side piece butts up to it. At the front of the bed the brackets originally carried a decoration, but this is no longer visible due to corrosion. Traces of a small moulding, which marked the transition between the edges of the bracket and the slightly inset decoration, can still be seen. The brackets are flush with the front face of the bedframe, and have thus been let into the wood.

Within the bedframe was fitted a wooden construction (Grid A) to support the mattress. This resembles a modern slatted base and consisted of three lengthwise and nine crosswise slats, creating 40 holes of c 16.5 x 15 cm.. On the right-hand side about a quarter of this grid is preserved, comprising the two right-hand crosswise slats and parts of the lengthwise slats. From these we can conclude that the joints used at the intersections were half-lap joints. Along the inside of the bedframe we can still see the holes which carried the slats of Grid A. They are clearly the mortises for tenons in the slats, which in some cases they still contain. These details allow us to reconstruct the original positions of the elements of Grid A.

Grid A was strengthened underneath by a second, simpler wooden construction (Grid B), consisting of two stretchers and three ties. The stretchers were fitted to the bedframe and the ties ran between them. The members of Grid B were connected to each other using mortise-and-tenon joints. The joints between the stretchers and the bedframe are cut by the modern metal

supporting frame and are thus no longer visible. The modern frame also makes it difficult to see whether auxiliary legs were fitted at the corners of Grid B.

At the back we find the remains of two boards which meet in the right-hand corner. These are fitted along the back and the right-hand edges of the bedframe and stand on top of the frame (figs. 33 and 36). The right-hand board runs to the outside edge of the corner and the back board butts up to it. The boards are placed on the bedframe without any additional support, nor are they let into it. They presumably once ran the full lengths of the back and right-hand end of the bed. It was not possible to study the back because the bed is anchored to the back wall with several metal pins (modern). The two boards, which are poorly preserved, carry traces of a decoration along the top edge: a small bronze strip in which a floral motif (palmettes) is inlaid in copper and probably silver (fig. 35 G). The palmettes are joined at the bottom by volutes in niello (the soiled surface of the strips does not allow us to identify the materials used in the inlay with any certainty). The inlay is flanked by a small bronze moulding which marks the transition between the slightly inset decoration and the edges of the strips. It is possible that these strips come from another bed (see below, code 3.4.2.).

- 3.3.1. Wood, carbonized. Five samples: bedframe, front side-rail; Grid B; Grid A; right-hand board; stretcher between legs. All *Abies alba*.
- 3.3.3. A number of bronze elements are added to the wooden bed:
 - the casing of the legs;
 - the brackets on the two front corners of the bedframe;
 - a strip along the top edge of both preserved boards, in which a floral motif is inlaid in copper, silver and niello.
- 3.3.4. It is not clear how the legs were attached to the bedframe. On all probability a round iron rod ran vertically through the centre of the turned elements of the legs. We cannot see how these rods were let into the bedframe. The corners of the bedframe were secured with mortise-and-tenon joints. These were also used at the points where Grid A meets the bedframe and throughout Grid B beneath. The slats of Grid A intersect using half-lap joints. The original joints between Grid B and the bedframe are no longer visible due to the modern supporting frame. Gluing would have added great strength. There may have been auxiliary legs fitted under Grid B (at the ends of the stretchers) to lend the construction greater support. It is not clear how the boards were attached to the bedframe.
- 3.4.1. Of the original legs the left-hand rear leg is missing. The turned elements of the left-hand front leg and the right-hand rear leg are also lost. The vertical metal rods inside the preserved legs, as well as the wood around them, appear to be modern additions which imitate the original construction. Only about a quarter of Grid A is preserved within the bedframe. The boards have crumbled away at the edges and only a small part of them has survived.
- 3.4.2. Following their discovery, a metal frame was constructed to support the remains of the bed. This consists of four legs and a horizontal frame which extends fully under the surviving fragments. The bed is also anchored to the back wall of the room with metal pins. A card in the inventory list of the Magazzino Archeologico in Herculaneum relates to this bed. It refers to inventory number 392 on page 71-72 and states: 'Data del reperto 21-12-1928; Provenienza: IV cardine (Insula III); Oggetto: parte di letto rivestita di bronzo, lungo m. 1,00. Inserita nel letto ora nella casa del tramezzo di legno. Sottoscritto AL JL 6-6-84'. This remark appears to concern the decorated strip along the top edge of the boards. This added element probably originates from a bed found on the first floor of the Casa della Fullonica (IV 5-7), of which nothing more was preserved, and not from *Insula III* as the card suggests. The wooden remains have been treated with a mixture of paraffin-wax and carbon-powder.
- 3.5.1. H. c 84 cm., L. 2206 mm., W. 1218 mm.

3.5.2.

LEGS

L. max. base: 125 mm.
D. base: 60 mm.
H. max. base: 55 mm.
Diam. hole top base: 25 mm.
W. stretcher: max. 109 mm.
H. stretcher: 31 mm.
Diam. max. leg elements: 127 mm.
H. (including base): 315 mm.

BEDFRAME

H. 45 mm.
L. 2206 mm.
W. 1218 mm.
W. rails: 120-130 mm.

BRONZE BRACKETS

H. 45 mm.
W. 40 mm.
L. front: 456 mm. (l.) and 459 mm. (r.).
L. side: 165 mm. (l.) and 176 mm. (r.).
thickness c 5 mm.

GRID A

H. slats: 32 mm.
Position lengthwise slats
(from front to back):
1. 284-380 mm.;
2. 558-660 mm.;
3. 825-920 mm.
(W. 95-103 mm.).

Position crosswise slats (1-7 are reconstructed; 8 and 9 are preserved): (from left to right)

1. 272-335 mm.;
2. 474-532 mm.;
3. 670-734 mm.;
4. 868-930 mm.;
5. 1065-1131 mm.;
6. 1260-1332 mm.;
7. 1458-1522 mm.;
8. 1655-1728 mm.;
9. 1860-1928 mm.;

GRID B

H. c 38 mm.
Position stretchers (from left to right):
1. 525-590 mm. (f.);
534-600 mm. (b.);
2. 1618-1691 mm. (f.);
1605-1678 mm. (b.).

Position ties (from front to back):

1. 307-387 mm. (l.);
305-380 mm. (r.);
2. 569-645 mm. (l.);
568-645 mm. (r.);
3. 825-900 mm. (l.);
828-907 mm. (r.).

BOARDS

H. c 48 cm.; thickness 23-25 mm.
L. max. pres.: c 85 cm. (rear board) and 91 cm. (right-hand side board).
H. strips with inlay: 37 mm.

4. See appendix 1, 27-4-1928 and 21-12-1928.
Inventario del Magazzino Archeologico: pag. 71-72, numero d'inventario 392.
5. Maiuri 1958, 214; Brion 1965, 114 fig. 55 (wrongly captioned: 'Maison du mobilier carbonisé. Lit en bois'); Boube-Piccot 1975, 374 nr. A 77; Gore 1984, 592; Deiss 1985, 88 with fig. and 109; Faust 1989, 173 Kat. 124; Mols 1991-1992, 36 fig. 8 and 37; De Kind 1992, 142; Mols 1993, 490-491 and 495 tav. CX, 2.

2

1. WOODEN BED, figs. 37-42.
- 2.1.1. III 13, Casa a Graticcio.
- 2.1.2. First floor, room N. 5 (Maiuri 1958, 416 fig. 354); west wall.
- 2.1.3. Bedroom, possibly doubling as living room.
- 2.2. November 1928.
- 2.3. The bed was found along the west wall of the room between two slightly protruding piers. Maiuri's (1958, 419) remarks suggest that the room also contained the following important finds: a child's bed (see cat.no. 3), the roof of an aedicula (see cat.no. 27), a wooden sculpture

and two vessels, one bronze and one terracotta. Between 9 and 19 November 1928 the excavation reports also mention the find of a large number of bronze statuettes and pieces of glass-paste. Based on the presence of the two beds Maiuri (1958, 419) has confusingly called the room a *biclinium*, in the sense of a bedroom (see § 3.2.2). The room has a Fourth Style panel decoration and a wide opening facing east. Scatozza Höricht (1989, 31 and 87, cat. 11 and 192, resp. inv. E 306 and E 359) has included the pieces of glass-paste in her catalogue.

- 3.1. The bed stands against the south wall of the room in which it was found.
- 3.2. The base of the bed is formed by a rectangular bedframe composed of four rails. The side-rails run the entire length of the bed. The cross-rails are fitted between them and held in place by mortise-and-tenon joints.

The frame originally held a slatted base (Grid A) consisting of three lengthwise and seven crosswise slats. The surviving fragments allow a complete reconstruction of Grid A. The rear lengthwise slat is fully preserved, complete with notches for half-lap joints. A fragment of its neighbour has also survived (see below, code 3.4.2.). Along the inside of the bedframe we can see other notches which were mortises for tenons on the slats. There were half-lap joints at the intersections of the grid, where the crosswise slats pass over the lengthwise slats.

For additional strength a rack-type construction (Grid B) was fitted beneath Grid A in the middle of the bed. It consisted of two stretchers fitted across the bedframe and three ties fitted into the stretchers. The two stretchers are completely preserved, but of the three ties only the ends survive. This is however sufficient to reconstruct Grid B. Mortise-and-tenon joints are used throughout Grid B, but the joints between the stretchers and the bedframe are covered by the modern metal frame and are thus invisible. The various parts of Grid B are more or less in line with elements of Grid A above.

Boards were originally mounted along the rear and left-hand edges of the bedframe, but not much of them survives. It is thus impossible to reconstruct their original height. The left-hand board seems to consist of two separate panels standing next to each other. It runs through to the outside of the bedframe and the rear board butts up to it. The boards fit into a rebate cut in the top edge of the bedframe. Mouldings are fitted in front of the boards to strengthen the construction. These mouldings are largely preserved. They are mitred in the left-hand rear corner.

- 3.3.1. Wood, carbonized. Five samples: bedframe, front side-rail; Grid A; Grid B; left-hand moulding; left-hand board. All *Abies alba*.
- 3.3.4. Mortise-and-tenon joints are used throughout the bedframe and Grid B, and also for the joints between Grid A and the bedframe. Those between Grid B and the bedframe are covered by the modern metal frame and are no longer visible. Half-lap joints are used at the intersections of Grid A. The boards are slightly let into the frame and reinforced by a moulding fitted into the angle between the boards and the bedframe.
- 3.4.1. Much of the bed is missing. The legs have disappeared completely. In Grid B only the stretchers and the ends of the ties have survived. In Grid A the two front lengthwise slats are almost entirely lost. All seven of the crosswise slats are missing. However, because many of the mortises and tenon stubs are preserved, a complete reconstruction of the bedframe and of Grids A and B is possible (fig. 38). Of the boards only fragments are preserved. These allow us to identify their original position but not to establish their original height.
- 3.4.2. A metal supporting frame was placed under all the preserved elements shortly after the discovery. This frame includes the four legs on which the bed now rests. The wooden remains have been treated with a mixture of paraffin-wax and carbon-powder. There is probably a mistake in the reconstruction of Grid A. On the right-hand side of the bed a part (c 50 cm.) of the central lengthwise slat has been reconstructed (fig. 42). The top of this slat is flush with the

top of the bedframe, leaving no space for the half-lap joint required to take the crosswise slat which (on the evidence of the notches for half-lap joints which remain in the inside edge of the bedframe) must have originally been there. Closer examination reveals that the reconstructed slat consists of three separate sections. The central piece, and perhaps the piece on the left, have been wrongly positioned.

3.5.1. H. max. pres. 365 mm., L. 2105 mm., W. 1110 mm. (l.) and 1105 mm. (r.).

3.5.2.

BEDFRAME

H. 50 mm.

L. 2105 mm.

W. left 1110 mm.

W. right 1105 mm.

W. rails 120-130 mm.

GRID A

H. 50 mm.

L. holes on inside bedframe: c 80 mm.

H. holes on inside bedframe: c 15 mm.

Position holes in bedframe seen from top: 15-30 mm.

D. notches for mortise-and-tenon joints in the rear side-rail of bedframe: c 2 cm.

D. notches for half-lap joints cut in surviving slat: 25 mm.

Original position lengthwise slats (1 l. and 2 l. are reconstructed from the notches in the bedframe): (from front to back)

1. 270-360 mm. (l.);

284-361 mm. (r.);

2. 520-598 mm. (l.);

530-605 mm. (r.);

3. 754-839 mm. (l.);

745-831 mm. (r.).

(B 75-90 mm.)

H. 45 mm.

Notches for half-lap joints in preserved slat 3:

L. 9 cm; H. 1.5 cm.

Original position crosswise slats (from left to right):

1. 271-360 mm.;

2. 524-617 mm.;

3. 773-858 mm.;

4. 1015-1105 mm.;

5. (illegible)-1353 mm.;

6. 1506-1592 mm.;

7. 1750-1839 mm.;

(W. 86-93 mm.).

GRID B

Position stretchers (from right to left):

1. 519-600 mm.;

2. 1500-1585 mm.

Position ties (from front to back):

1. 275-351 mm.;

2. 512-582 mm.;

3. 749-835 mm.

H. 45 mm.

BOARDS

Thickness 20 mm.;

H. max. 28 cm.

Vertical join in left-hand board (from front) at 610 mm.

Mouldings: H. 80 mm.; W. 53 mm.

Rebate in bedframe: H. 10 mm.; W. 75 mm.

4. See appendix 1: Descrizione di ambienti of 23-2-1929.

5. Maiuri 1932, 64; Maiuri 1958, 419 and tav. XXXVI; Maiuri 1964, 31; Packer 1975, 141; De Vos/De Vos 1982, 270; Faust 1989, 173 Kat. 125; Clarke 1991, 259 and 262 fig. 161; De Kind 1992, 151.

3

1. WOODEN CHILD'S BED, figs. 43-45.

2.1.1. III 13, Casa a Graticcio.

2.1.2. First floor, room N.5 (Maiuri 1958, 416 fig. 354); south wall.

2.1.3. Bedroom, possibly doubling as living room.

2.2. November 1928.

2.3. See cat.no. 2, code 2.3.

3.1. Magazzino Archeologico, Herculaneum.

3.2. This small bed rests on two simple timber supports. It is not possible to check whether these have been correctly positioned during the reconstruction because the modern metal frame cuts the original joints between them and the rest of the bed. Both supports probably ran the full width of the bed.

A rectangular base board rests on the supports. It is probably assembled from seven small boards glued edge to edge and would originally have been quite solid. Now there is a large hole in it. A low rim was slightly let in around the top of the board parallel to the edge. About half of this rim is preserved, but position of the rest can be traced via the notch in the board which remains where the rim itself has disappeared. The rim would have served to keep the mattress in place. At least four round uprights originally stood on the base, of which one remains in situ. It stands in the right-hand rear corner, equidistant from the two edges of the board. It is certain that there was a similar upright in each of the other corners. Metal rods (to replace the uprights) have been fitted in the left-hand rear corner and in the middle of the long sides, but not in the two front corners. It is almost certain that two further uprights, fragments of which are preserved separately in the Magazzino Archeologico at Herculaneum, were replaced in position after the discovery. Both are broken in two pieces, each c 12 cm. long. Modern metal pins seem to have been inserted lengthwise into these fragments. Identical round uprights may also have stood in the middle of the long sides. There seem to be traces of them at the back of the base board. The uprights were fixed to the board using mortise-and-tenon joints.

A rectangular frame consisting of four rails sits on top of the uprights. The external dimensions of this frame correspond with those of the base board. The rails were attached to the uprights with mortise-and-tenon joints. The side-rails run the full length of the bed, while the cross-rails are fitted between them using mortise-and-tenon joints. The top outer edge of the frame is lightly moulded.

3.3.1. Wood, carbonized. One sample: raised rim in base board = *Abies alba*.

3.3.4. The base board is made up of seven small boards glued edge to edge (i.e. without joints). A narrow wooden rim is let into the top of this board and is probably also glued. The corners of the rim are mitred. The uprights are attached to the base board and to the upper frame with mortise-and-tenon joints, which are also used to connect the rails of the frame together. The supports were probably glued to the base board.

3.4.1. The missing parts of the bed are:

- parts of the supports;
- a large section of the base board and much of the raised rim;
- at least three and probably five uprights between the base board and the upper frame;
- small fragments from the upper frame.

3.4.2. The remains of the bed are held in position by a modern metal frame. This cuts the original join between the supports and the base board, as well as the joint between the one surviving upright and the upper frame. The wooden remains have been treated with a mixture of paraffin-wax and carbon-powder.

3.5.1. H. 335, L. 1201, W. 702 (the height measurement unavoidably includes the metal strips of the modern frame).

3.5.2.

SUPPORTS

H. max. 6 cm.

L. reconstructed 335 mm.

Position from left of bed:

1. 200-284 mm. (f.); 205-280 mm. (b.);

2. c 92-100 cm.

BASE BOARD

H. 20 mm.

L. 1201 mm.

W. 702 mm.

RIM ON BASE BOARD

H. 17 mm. (let in 5 mm. projects 12 mm.)

W. 18 mm.

Distance from edge 58 mm. (on all sides)

ROUND UPRIGHT

H.: 272 mm.

Diam.: c 45 mm.

Location: 1 cm. from edge base board

Position uprights on back of base board (from left to right):
578-622 mm.

UPPER FRAME

H. rails: 38 mm.

W. rails: 81 mm.

Moulding: H. c 6 mm.;

W. c 12 mm.

4. See appendix 1: Descrizione di ambienti of 23-2-1929.
5. Maiuri 1932, 64; Maiuri 1958, 419 and tav. XXXVI; Maiuri 1964, 31; Packer 1975, 141; De Vos/De Vos 1982, 270; Clarke 1991, 259; De Kind 1992, 151.

4

1. WOODEN BED, figs. 46-47.
 - 2.1.1. III 14, Casa a Graticcio.
 - 2.1.2. First floor, room N.1. (Maiuri 1958, 416 fig. 354); east wall.
 - 2.1.3. Bedroom.
 - 2.2. Early 1928, probably between 10 and 20 February.
 - 2.3. A small wall cupboard (see cat.no. 35) and a marble table on a single support (inventory-number E 190; Maiuri 1958, 417) were found in the same room. The length of the bed roughly corresponds to the width of the east side of the room. The room was dimly lit via a small window in the south wall, which looked onto the *atrium* of the Casa dell'Erma di Bronzo. There was a door in the north wall. The floor was of *opus signinum* and the walls had a monochrome Fourth Style panel decoration in red with a central *aedicula* and *chimaerae*.
- 3.1. In situ.
- 3.2. The base of the bed is formed by a rectangular bedframe composed of four rails. The two side-rails run the full length of the bed, while the cross-rails are fitted between them and held in place with mortise-and-tenon joints. One tenon can be distinguished in the right-hand rear corner where a small section of the side-rail has disappeared.

A gate-like construction is fitted inside the bedframe (Grid B) to strengthen the bedframe and support the mattress. The top of Grid B is level with the bottom of the bedframe. Grid B consists of two stretchers linked by three ties. These are held together using mortise-and-tenon joints. The joints between Grid B and the bedframe are cut by the modern supporting frame. It is therefore impossible to establish whether Grid B has been correctly replaced by the restorers.

Although there is now no trace of any boards, an old photograph, probably taken in 1928, does show the remains of a board on the right-hand side of the bed (see Maiuri 1958, 417 fig. 355; Soprintendenza Archeologica di Pompei, Archivio Fotografico Neg. E/C 65).

- 3.3.1. Wood, carbonized. Three samples: bedframe, front side-rail; Grid B; bedframe rear side-rail. All *Abies alba*.
- 3.3.4. Mortise-and-tenon joints are used throughout the bed. The original joints between Grid B and the bedframe are no longer visible.
- 3.4.1. The legs and a board are missing. A small part of the bedframe has disappeared in the right-hand rear corner.
- 3.4.2. The bed is supported on a modern metal frame (H. 295 mm.). This provides four legs which stand under Grid B and carry the whole bed. The modern frame cuts the joints between Grid B and the bedframe. The wooden remains have been treated with a mixture of paraffin-wax and carbon-powder.
- 3.5.1. H. bedframe max. pres. c 95 mm., L. 2038 mm., W. 1254 mm. (l.) and 1252 mm. (r.).
- 3.5.2.

<p>BEDFRAME L. 2038 mm. W. 1254 mm. (l.) and 1252 mm. (r.). Rails: H. 48 mm. (f.); 46 mm. (b.); 45 mm. (l.) and 48 mm. (r.); W. 101 mm. (f.); 103 mm. (b.); 104 mm. (l.) and 108 mm. (r.).</p> <p>GRID B Position stretchers: 1. 483-560 mm. (f.); 490-570 mm. (b.);</p>	<p>2. 1467-1541 mm. (f.); 1472-1545 mm. (b.). Position ties: 1. 322-372 mm. (l.); 321-371 mm. (r.); 2. 585-658 mm. (l.); 586-660 mm. (r.); 3. 878-929 mm. (l.); 880-930 mm. (r.); H. 48 mm.</p>
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4. See appendix 1: 20-2-1928; Descrizione di ambienti 23-2-1929.
5. Bottazzi 1928, 3; Maiuri 1932, 64; Maiuri 1958, 416-417 and fig. 355; Packer 1975, 141; De Vos/De Vos 1982, 270; Clarke 1991, 259 and fig. 160; De Kind 1992, 150.

5

1. TWO WOODEN COUCHES (*BICLINIUM*), figs. 48-51.
- 2.1.1. III 14, Casa a Graticcio.
- 2.1.2. First floor, room N.2. (Maiuri 1958, 416 fig. 354); east and south wall.
- 2.1.3. Living room, also used as a dining room, cf. Clarke 1991, 252.
- 2.2. 18-2-1928.
- 2.3. The couches occupy the entire east wall and two thirds of the south wall of the room. Remains of food indicate that the room was also used as a dining room. The walls have a Fourth Style panel decoration with black borders and red panels. A large window (height c 1.50 m.; width 0.80 m.) in the north wall overlooks the courtyard. The inventory of this room further confirms its use as a dining room: a cupboard (cat.no. 36), a small wall-cupboard with two doors and decoration in bone; a marble table with herm decoration on leg; bronze pan and bread on one on the couches; glass, terracotta and bronze vessels and two bronze lamps. This does not

exclude the possibility that people also spent the night here. Clarke (1991, 259) was of the same view. Maiuri (1958, 417) says of this room: 'La disposizione dei letti, simile a quella che si osserva nella Casa dell'alcova, e il genere della suppellettile conservata nel grande armadio può far supporre che anche qui si tratti più di un biclinio conviviale che di un cubiculo bicliniare' (the term 'cubiculo bicliniare' is a bad choice, as is argued in § 3.2.2). Glass and terracotta vessels were found in the cupboard, as were a bronze hinge (it is not clear whether this was part of the cupboard) and a string of beads made of glass paste (cf. for glassware: Scatozza Höricht 1986, cat. 12, 19, 44, 52, 72, 97, 117, 128, inv. E 153, 145, 148, 148a, 151, 157, 174, 147; cf. for the beads: Scatozza Höricht 1989, 84, cat. 191 [inv. E 162]). There is a note lying in the cupboard which says: 'gli oggetti sono stati trasformati in deposito (15-12-'80)'. The *aedicula* which Maiuri (1958, 417) includes as part of the inventory of this room was probably found in room 5 of the first floor apartment at the front of the Casa a Graticcio (III 13).

- 3.1. The couches stand in situ and are only partially excavated.
- 3.2. Although the two couches appear to form a whole, they will be discussed separately for the sake of clarity. Both have been exposed down to c 26 cm. above the floor. Whatever remains of the bedframes and the legs must therefore remain outside our consideration here. The current state of preservation is so poor that details cannot be distinguished. For example, there are virtually no visible traces of the joints between the rails of the bedframes. This may be due either to the process of carbonization or to the layer of paraffin-wax.
 The couch along the east wall (Couch A) originally consisted of a bedframe composed of four rails. These were probably held together using mortise-and-tenon joints. The left-hand cross-rail and the rear side-rail are completely preserved, while only part of the right-hand cross-rail survives and the front side-rail has disappeared altogether. The left-hand cross-rail runs the entire width of the bed and the rear side-rail butts up to it. At the other end this member would probably have met the rear side-rail of the second couch in a mortise-and-tenon joint. Boards are mounted along the back and sides of the bedframe. These have crumbled at the top making it impossible to establish their original height. The right-hand board is the only one which stands free of the wall. An old photograph, taken when the piece was excavated, shows panelling (Soprintendenza Archeologica di Pompei, Archivio Fotografico, Neg. E/C 33, data 22 II 1928).
 The couch along the south wall (Couch B) is at right angles to Couch A and is very similar to it. It likewise consisted of a bedframe composed of four rails, probably fixed at the corners with mortise-and-tenon joints. The right-hand cross-rail and a large part of the front side-rail are now missing. The left-hand cross-rail runs the full width of the *biclinium*. The rear side-rail fits to it and runs through to the front of the couch on the right. Boards are mounted along the rear and right-hand side of the bedframe. These too have crumbled along the upper rim, and thus their original height cannot be known. A long section of the front side-rail of this couch runs along the free-standing right-hand board of Couch A.
- 3.3.1. The visible remains of both couches are wooden. The legs, which are still covered with volcanic material, might be wooden with bronze. Four wood samples have been analysed: left-hand board of left-hand couch; rear board of left-hand couch; right-hand board of left-hand couch; bedframe right-hand couch, rear side-rail right-hand couch. All *Abies alba*.
- 3.3.4. The joints between the boards are not visible. The joints between the rails in the bedframes are probably all mortise-and-tenons.
- 3.4.1. Large sections of the bedframes, the entire top edge and large areas of the boards are missing from the visible remains of the *biclinium*.
- 3.4.2. Shortly after discovery the top of the boards were skimmed with cement. As a result they are now bonded to modern wooden battens placed behind the remains to strengthen them. The

fronts of both bedframes are also skimmed with cement to prevent the couches from falling to pieces. A modern plate has been fitted to support the right-hand side of the board between the couches. All the visible remains have been treated with a mixture of paraffin-wax and carbon-powder.

- 3.5. The measurements are not all precise due to the *biclinium*'s poor state of preservation. Account has also to be taken of the fact that large parts of the couches have not yet been excavated.

- 3.5.1. Couch A) H. 26 cm. (to top bedframe), 43.5 cm. (max. preserved boards), L. 238 cm. W. 125 cm.
Couch B) H. 26 cm. (to top bedframe), 56 cm. (max. preserved boards), L. 240 cm., W. 125 cm.

- 3.5.2.

COUCH A

BEDFRAME

L. 238 cm.

W. 125 cm.

W. rails: c 13 cm.

BOARDS

H. max. pres.: 43.5 cm.

Thickness 2.5 cm. (l. and b.);

Thickness 3-3.5 cm. (r.)

L. max. pres. right-hand board: 104 cm.

COUCH B

BEDFRAME

L. 240 cm.

W. 125 cm.

W. rails c 13 cm.

BOARDS

H. max. pres. 56 cm.

Thickness 2.5 cm.

4. See appendix 1: 18-2-1928.

5. Bottazzi 1928, 3; Boehringer 1929, 124; Maiuri 1932, 64; Maiuri 1958, 417; Maiuri 1964, 31; Packer 1975, 141; De Vos/De Vos 1982, 270; Clarke 1991, 259; De Kind 1992, 150; Mols 1993, 490 nota 10.

6

1. TWO WOODEN COUCHES (BICLINIUM), figs. 52-57.

- 2.1.1. IV 4, Casa dell'Alcova.

- 2.1.2. Room N. 19 (Maiuri 1958, 389); north and west wall.

- 2.1.3. Dining room, cf. Maiuri 1958, 392 (for *biclinium* see § 3.2.2).

- 2.2. 16 and 17-7-1929.

- 2.3. On the west side of the room, facing the street, there are two barred windows high in the wall. There is a small closable doorway in the north wall. In the east wall there was originally a sliding door looking onto the courtyard. The *biclinium* is L-shaped and stands along the north and west sides of the room about 30 cms. from the wall. A photograph from 1930 (Maiuri 1958, 392 fig. 326; Neg. E/C 91) shows a candelabrum in the room which is not mentioned in the excavation reports. These do however record the finding of a terracotta lamp (inv. E 458), terracotta vessels (inv. E 459/460) and pieces of fabric (inv. E 461). The room has a Fourth Style wall painting with richly detailed architectonic elements on a red background, cf. Moormann 1988, 106 and De Kind 1992, 188. There is a mosaic floor in marble with

polychrome squares.

3.1. In situ.

- 3.2. This description is restricted to the top of the bedframes, since the rest of the *biclinium* is hidden by a modern layer of cement (see below, code 3.4.2). It should also be remembered that the piece was found in many fragments (see below, code 3.4.2). The uncertain relationship between many of these fragments makes it impossible to reconstruct the original measurements of the *biclinium*. The present dimensions are highly implausible (see below, code 3.5.1.). They are so extended that they could not possibly reflect the original arrangement. The description follows fig. 54, which suggests a plan of the original form.

The right-hand couch (north) consists of a rectangular bedframe composed of four rails. Of these the right-hand side-rail runs the full length of the couch. Both cross-rails are connected to it, probably with mortise-and-tenon joints. The rear cross-rail runs on into the left-hand couch, while the left-hand side-rail fits to it, probably with a mortise-and-tenon joint. At the other end both side-rails run to the front of the couch and so the other cross-rail fits between them.

This bedframe carries a gate-like construction (Grid B) to support the mattress. It is composed of seven stretchers and two ties. Stretchers 1, 5 and 7 (from front to back) run between the two side-rails of the frame and are probably attached to them with mortise-and-tenon joints. The two ties are fitted between stretchers 1 and 7, again with mortise-and-tenon joints. Half-lap joints are employed where the fifth stretcher crosses the two ties. Stretchers 2, 3, 4 and 6 are fitted between the two ties using mortise-and-tenon joints. No traces of boards or legs have survived.

Since the two form a whole, the left-hand couch (west) obviously resembles its partner very closely. Again there is a rectangular bedframe composed of four rails. The rear cross-rail of the right-hand couch runs right through to form the rear side-rail of the left-hand bedframe. Meanwhile, the front side-rail of the left-hand couch ends where it meets the left-hand side-rail of the right-hand couch, which also, in effect, forms the right-hand cross-rail of the left-hand couch. The left-hand cross-rail is fitted between the two side-rails. Mortise-and-tenon joints appear to be used throughout the bedframe.

Again, a gate-like construction (Grid B) is carried by the rectangular frame. This time Grid B consists of six stretchers and two ties. Of these stretchers 1, 2 and 6 (from left to right) run the full width of the bedframe and meet the side-rails in mortise-and-tenon joints. The two ties are fitted between stretcher 1 and the 'cross-rail' formed by the left-hand side-rail of the right-hand couch. Stretchers 3, 4 and 5 are fitted between the ties using mortise-and-tenon joints. Half-lap joints are employed where stretchers 1, 2 and 6 cross under the two ties. Moreover, the joint marked no. 4 in fig. 54 appears to be strengthened with a dowel (cf. fig. 55).

Some fragments of a board remain along the left-hand end of the couch. These protrude only a few centimetres above the bedframe. The legs of the couch are not preserved.

- 3.3.1. Wood, carbonized. Three samples: (left-hand couch, Grid B; right-hand couch, Grid B, 2x). All *Abies alba*.
- 3.3.4. The poor state of preservation means that no definite conclusions can be drawn about the joints used. Most of them seem to be mortise-and-tenon joints, with half-lap joints used in several places. One of these is probably strengthened with a dowel (fig. 54, no. 4; fig. 55).
- 3.4.1. As it now appears, only the boards of the *biclinium* seem to be missing, although the vestiges of one board are visible on the far left of the piece. According to Formicola, who restored the *biclinium* in 1978, nothing of the legs remains behind the modern cement (although the excavation reports suggest that they were originally found). Nor are there any visible traces of the red paint which is also mentioned in the reports.
- 3.4.2. The *biclinium* was found in many fragments, the result of damage caused by an 18th century

excavation shaft. After the discovery the excavators tried as far as possible to replace the fragments in position. Nothing is known about this first reconstruction. In 1978, when the fragments threatened to fall apart, the *biclinium* was again restored. Loose fragments were fixed back in place and cement was smeared along the edges of the whole *biclinium*. This was, however, not enough to prevent further deterioration. Small mistakes were also made in the reconstruction of the fragments, with some pieces wrongly sited. These spots are numbered in fig. 54. Fragment 1 could not have run through to the outside edge of the couch, since this would have made the construction too weak (see fig. 54 E). The logical solution would be that side-rail 2 ran through, with the stretcher of which fragment 1 was a part fitting inside it. Furthermore, several fragments appear to be turned at 90° to their original position. These are indicated by the number 3 in fig. 54. All the wooden remains have been treated with a mixture of paraffin-wax and carbon-powder.

- 3.5.1. The original height cannot be measured due to the modern reconstruction, which has encased the couches in cement up to the lower edge of the bedframes. The top of the bedframes stands c 25 cm. above the present floor.

Right-hand couch:

L. 275 cm. (l.) and 274 cm. (r.);

W. 110.5 cm. (f.) and 103 cm. (b.);

Left-hand couch

L. 232 cm. (b.) and 230 cm. (f.);

W. 111.5 cm. (l.) and 123.5 cm. (r.)

3.5.2.

RIGHT-HAND COUCH

BEDFRAME

Height top of bedframe above floor: c 25 cm.

left-hand side-rail: L. 264 cm.; W. 8 cm.

right-hand side-rail: L. 274 cm.; W. 10 cm.

front cross-rail: L. 91 cm.; W. 9 cm.

rear cross-rail: L. 317 cm. (running on into left-hand couch); W. 9 cm.

GRID B

Position stretchers (from front to back):

1. 41-50 cm.;

2. 82-95 cm.;

3. 114-125 cm.;

4. 140-147 cm.;

5. 162-177 cm.;

6. 191-204 cm.;

7. 219-228 cm.

Position ties (from left to right):

1. 17-25 cm. (f.)
and 18-25 cm. (b.);

2. 81-88 cm. (f.)
and 83-90 cm. (b.).

LEFT-HAND COUCH

BEDFRAME

Height top of bedframe above floor: c 25 cm.

rear side-rail: L. 317 cm. (running on into right-hand couch); W. 9 cm.

front side-rail: L. 222 cm.; W. 9 cm.

left-hand cross-rail: L. 95 cm.; W. 9 cm.

right-hand cross-rail: L. 264 cm. (running on into right-hand couch); W. 8 cm.

GRID B

Position stretchers (from left to right):

1. 14-21 cm.;

2. 68-78 cm.;

3. 100-112 cm.;

4. 130-138 cm.;

5. 154-165 cm.;

6. 184-195 cm.

Position ties (from back to front):

1. 17-24.5 cm. (l.) and 23-31 cm. (r.);

2. 84-92 cm. (l.) and 97-108 cm. (r.).

BOARD

Thickness 3 cm.

H. max. pres. 6 cm.

4. See appendix 1: 16 and 17-7-1929.

5. Technau 1930, 388; Maiuri 1958, 392 and fig. 326; Maiuri 1964, 29; Deiss 1985, 109 (who mistakenly refers to the presence of the legs); De Kind 1992, 186; Mols 1993, 490 and 494 tav. CIX, 2.

1. WOODEN COUCH figs. 58-60.
 - 2.1.1. V 5, Casa del Mobilio Carbonizzato.
 - 2.1.2. Room 8 (Maiuri 1958, 256 fig. 203); north wall.
 - 2.1.3. Dining and resting room
 - 2.2. 2-3-1933 and 9-3-1933.
 - 2.3. The room has a black-and-white mosaic floor. The wall paintings are Fourth Style with panels on a red background with embroidery, architectural ornaments and tondi. A plaster moulding runs along the top of the main zone; three windows (two small windows and a large central opening) overlook the garden on the south side. There is a door in the west wall. The room also contained the remains of a second couch (no longer preserved, but described in the *Descrizione di ambienti*: see appendix 1), a wooden table (cat.no. 15) and a terracotta lamp (inv. E 1006). The nature of the room and the finds made in it suggest a dining and resting room. The presence of the second couch provides some grounds for regarding it as a *biclinium*.
 - 3.1. In situ.
 - 3.2. The base of the couch is formed by a rectangular bedframe composed of four rails. The two cross-rails are fitted between the two side-rails using mortise-and-tenon joints.

A gate-like construction (Grid B) is constructed within the bedframe to support the mattress. It consists of five stretchers and two ties. These are arranged as follows (from left to right): the two outside stretchers are fitted into the side-rails of the bedframe, with between them the two ties, and between them the remaining stretchers (which are numbered 2, 3 and 4 in 3.5.2 below). Mortise-and-tenon joints are used throughout. Stretchers 1 and 5 are flush with the rest of Grid B underneath, but stand slightly proud of it at the top, just below the upper plane of the bedframe.

Boards are mounted on top of the bedframe on three sides. The side boards run the full width of the couch and the rear board is fitted between them. The side boards have suffered severely since the excavation. An old photograph (see below, code 3.4.1) reveals that the upper half of the boards stood vertically while the lower half was slightly curved. The boards are slightly let into the bedframe, with the angle strengthened by the addition of mouldings which are mitred together in the corners. Nothing can be said about possible decoration since the piece is currently wrapped in plastic. This makes the following remark by Maiuri (1958, 260) all the more interesting: 'Di contro alla finestra è un divano di riposo, un letto ad alta fiancata ed alta spalliera, ma un letto non comune, eseguito nella preziosa tecnica dell'impellicciatura e che doveva essere ben fulcito di materassi e cuscini.' Maiuri here suggests that the couch would have originally been veneered. No traces of this are currently visible, nor is there any reference to the matter in the excavation reports.
 - 3.3.1. Wood, carbonized.
 - 3.3.4. All the joints in the bedframe and Grid B are mortise-and-tenon joints. The boards are slightly let into bedframe, with mouldings to strengthen the angle. The mouldings are mitred in the corners. All the surfaces between the mouldings, the boards and the bedframe are glued, as are the joins in the boards themselves.
 - 3.4.1. The original legs are missing. The excavation reports mention eight, four turned legs at the corners and four simple round supports, two on each long side of the couch. The mattress

support has not survived, although remains of it were found. The *Schede* contains an unnumbered card with a reference to the legs: 'Posto attuale: L/M L 1; data rev.: febbraio 1982; Coll. ex Casa del mobilio carbonizzato; Oggetto: due piedi di letto; Dim.: Altezza 20; Stato di conservazione: integri, carbonizzati; Descrizione: legno - due piedi di letto modanati, appartenenti al letto ora conservato nella Casa del mobilio carbonizzato e asportati per sicurezza il 16-12-1972.' On old photographs, such as Maiuri 1958, 260 fig. 207, they are still visible at the left-hand end of the couch. The pieces are now untraceable, however (the code L/M L 1 indicates the chest in which they should be stored). Large parts of both side boards are also missing. The photograph just mentioned shows that both were still intact shortly after the discovery.

- 3.4.2. A modern metal frame on eight legs has been placed under the entire couch (H. c 24 cm.). Modern wooden battens were also fitted under Grid B (H. c 2 cm.). A construction to hold the boards in their original position has been made using metal strips which surround the edges of the boards. Plastic sheeting has been attached to this construction and now totally encloses the boards. In several places it is attached to the boards with metal pins. The bedframe and Grid B are also encased in plastic. At first sight the complete covering of the couch in plastic would appear to be an effective measure against further disintegration. However, the damaging effect of heat under the wrapping should not be underestimated and it would be advisable to look for another solution. There is no sign of the metal strip construction nor of the plastic in the photograph mentioned in 3.4.1.

In the *Schede* the couch is described thus: 'Collocazione: Casa del mobilio carbonizzato; Descrizione: letto rettangolare fornito di tre sponde alte; poggia su piedi moderni. Provenienza: incerta; dimensioni: lunghezza massima ricostruita m. 220, larghezza m. 120, altezza letto 0,40, con la sponda 0,97; stato: carbonizzato e ricostruito da vari pezzi.' From this we can conclude that the couch was reconstructed from various pieces. This is not visible, very probably due to the thick layer of paraffin-wax and carbon-powder with which the couch has been treated.

- 3.5. The plastic covering prevents accurate measurement of the couch. Measurements are therefore given in centimetres. Some of the detailed measurements could not be taken at all.

- 3.5.1. H. max. pres. 65 cm., L. 222 cm., W. 121 cm.

- 3.5.2.

BEDFRAME

H. 6.5 cm.
L. 222 cm.
W. 121 cm.
W. side-rails: 11 cm.
W. cross-rails: 10.5 cm.
L. cross-rails: c 10.2 cm.

4. 133-144.5 cm.;

5. 162.5-168.5 cm.

H. 5.5 cm. (1 and 5)

H. 4.5 cm. (2, 3 and 4). Position ties (from front to back):

1. 29-35 cm.;

2. 90-96 cm.;

H. 5.5 cm.

GRID B

Position stretchers (from left to right):

1. 51.5-57 cm.;

2. 74-87 cm.;

3. 103-116.5 cm.;

BOARDS

H. 58.5 cm.

Thickness 1 cm.

D. rebate in bedframe: 0.5 cm.

4. See appendix 1: 2 and 9-3-1933.

5. Illustrazione Italiana 1933; Felletti Maj 1940, 57; Liversidge 1955, 7, 10-11, 50 and fig. 16; Maiuri 1958, 260 and 259, fig. 207; Kusch 1960, 20 and Abb. 30; Maiuri 1964, 43; Salza Prina Ricotti 1979, 123 nota 8; Zefiro 1979, 56; De Vos/De Vos 1982, 293; Deiss 1985, 109-110 and pl.; Faust 1989, 173 Kat. 126; Faust 1992, 107 and Abb. 37 (in both passages Faust mistakenly thinks that the couch was stretched with leather); Mastroberto 1992, 146; Moles

1993, 490 nota 13. An old Alinari-photograph of the room with inventory is in circulation and is frequently used in archaeological publications.

8

1. BED IN WOOD AND BRONZE, fig. 61.
 - 2.1.1. V 7, Casa di Nettuno ed Anfitrite.
 - 2.1.2. Possibly room 7, ground floor.
 - 2.1.3. Dining-room and resting room.
 - 2.2. 9-6-1933.
 - 2.3. No other finds are mentioned either in the excavation records or by Maiuri (1958, 397) - the room had been penetrated by one or more shafts in the 18th century. It is the largest room in the house (apart from the *atrium*) and has a floor of *opus signinum*. There is a Fourth Style wall painting with vertical white fields containing architecture which flank a central *aedicula* on a red background. The central paintings have disappeared. A stucco moulding ran along the top edge of the main zone and the ceiling was vaulted. A closable door opened on to a corridor leading to the *atrium* and another opening (to the *nymphaeum*), although quite wide, could also be locked. If the room had contained three beds the opening to the *nymphaeum* would have been blocked, thus it seems likely that this room served as a *biclinium*.
- 3.1. First floor, room at the front of the house (not numbered). The remains of the bed are now set up along the north wall, visible from taberna V 6. According to Maiuri (1958, 402) the remains of the bed were indeed found in this room. The description given in the excavation records and a 1933 photograph of shop V 6 (Herculaneum, Neg. E/C 259) upon which the remains of the bed do not appear, make this highly unlikely.
- 3.2. Of the two remaining legs only the base and the first two turned bronze sections have survived. Two further bronze sections from the left-hand front leg were also found. One of these was originally the next in the sequence (see below, code 3.4.2.) and the other was the topmost section of the leg.

A modern metal frame has been fitted to the left-hand front leg and carries a largish fragment of the original bedframe.

Since only a very small part of the original bed has survived it is impossible to make a full reconstruction of the piece.
- 3.3.1. The legs are assembled from turned bronze sections around a wooden core. The remaining fragments of the bedframe are wooden (carbonized).
- 3.3.4. The modern metal frame cuts the original joints so that nothing certain can be said about the way the bedframe was attached to the legs.
- 3.4.1. All that remains of this bed are parts of the two legs at the left-hand end, plus a little of the bedframe which rests on the left-hand front leg.
- 3.4.2. A modern wooden post (round) has been placed inside the bronze feet to hold the various turned bronze sections. A further metal construction is set up on the front leg to carry the fragments of the original bedframe. This construction is attached to the north wall of the room via a metal hook. The reconstruction of the left-hand front leg is not entirely accurate. From the floor to the

place where the modern post becomes visible the bronze sections are correctly positioned. However the next section, which now appears much higher up, was originally directly above the others. The fourth section is in the right place. Several intervening sections are missing.

- 3.5. Since the bed cannot be approached, all observations have to be made from a distance; no measurements are available.
4. See appendix 1: 9-6-1933.
5. Maiuri 1958, 401-402; Maiuri 1964, 43 and 99, tav. XIX, 34; Boube-Piccot 1975, 374 nr. A 76; Deiss 1985, 111 (who implies that the bed is intact); Clarke 1991, 252 fig. 154; Mols 1993, 490 nota 8.

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1. WOODEN BED, fig. 62-65.
 - 2.1.1. V 22.
 - 2.1.2. First floor, room D (Maiuri 1958, 440 fig. 387 B); west wall.
 - 2.1.3. Study and bedroom.
 - 2.2. 3-9-1937.
 - 2.3. According to the excavation reports, three chests containing wax tablets, seven gems (inv. E 1762-1768) and a terracotta lamp (inv. E 1799) were also found in the room. The floor is in *opus signinum* with small pieces of marble. The walls, which are timber framed, had a Fourth Style panel decoration. A closable window overlooked the *Decumanus Maximus*, cf. Maiuri 1958, 443.
- 3.1. V 17 (back room).
- 3.2. About a third of the bed has survived. The antique legs have been totally lost while only one of the four rails which originally composed the bedframe, remains more or less intact. This is the rear side-rail which runs the full length of the bed. Of the two cross-rails, which are attached to the rear side-rail with mortise-and-tenon joints, only fragments have been preserved, while the front beam is missing entirely.

In the front face of the rear side-rail are two mortises which were originally part of joints holding a construction to support the mattress (Grid B). Nothing is left of Grid B, but an old photograph (Maiuri 1958, 443 fig. 390) shows what it might have looked like. In fig. 64 F a reconstruction of Grid B is made, derived from discolourations on the photograph. It is difficult to establish whether a third hole, which is situated between the two mortises, had a function or is simply damage.

The bedframe carries two boards, one running along the back edge of the rear side-rail and the other along the outer edge of the right-hand cross-rail. This right-hand board slopes outwards at an angle of about 120° to the bedframe and probably served as the bedhead. The right-hand end of the rear board is cut at an angle to accommodate the slanting side board.

The boards are slightly let into the rear side-rail of the bedframe, which is rebated. To strengthen the joint between the boards and the bedframe, mouldings are fitted into the rebate. These mouldings are very weathered, but in some places the original profile is still recognisable. To ensure a good fit the moulding along the right-hand board is set at the same angle as the board itself. The two mouldings are mitred together in the rear right-hand corner

The boards are decorated with fielded panels (fig. 64 B-C), probably loosely inserted. In this case they would also have served to prevent warping in the boards (see § 4.6.2). Five complete panels are visible in the rear board. The sixth panel, on the extreme right, is cut by the slanting line in the corner. The right-hand board is too weathered for the panels to be distinguished. There are traces of further decoration on both boards, but nothing specific can be identified.

- 3.3.1. Wood, carbonized. Three samples were taken: two from the bedframe (right-hand rail and left-hand rail) were both *Abies alba*; one from the rear board was unidentifiable.
- 3.3.4. The members of the bedframe are held together with mortise-and-tenon joints. The rear board is let into the rear side-rail of the bedframe, as are mouldings to strengthen the angle between the boards and the bedframe. The nature of these joints could not be established. They may have been glued and possibly strengthened with dowels.
- 3.4.1. Approximately two thirds of the bed have disappeared. The legs and large parts of the bedframe, notably the front side-rail and parts of the cross-rails, no longer exist and nothing is left of a construction to support the mattress. An old photograph (Maiuri 1958, 443, fig. 390) shows that the bed was almost intact when it was excavated. On the basis of discolorations visible on the photograph, a rough reconstruction can be made of the gate-like construction within the wooden bedframe (Grid B, fig. 64 F). A large part of the bed was probably lost during its removal to *Insula V* 17. The rear board has crumbled away along the top edge and large parts of the right-hand board are missing. About 25 cm. of the moulding in front of the rear board has disappeared on the left. The right-hand board has partly subsided and some pieces of the top and front edges are missing. On the rear side-rail of the bedframe there are pieces missing around the notches for the mortise-and-tenon joints.
- 3.4.2. A modern metal frame on four legs has been built to support the remains of the bed (H. 34 cm.). Since it only carries the present remains, it must have been constructed after the photograph mentioned above (3.4.1.) was taken. It is therefore probable that the frame was only fitted after the bed was moved. The boards are supported by a combination of wooden panels and chicken wire. All the original wood has been treated with a mixture of paraffin-wax and carbon-powder.
- 3.5.1. H. (excluding legs) 44.5 cm. (l.) and 45 cm. (r.); L. max. 210 cm.; W. max. pres. 43 cm. (l.) and 96 cm. (r.).

3.5.2.

BEDFRAME

H. 4 cm.
W. rails 15 cm.
L. rear side-rail 191 cm.
L. max. pres. left-hand cross-rail 15 cm.
L. max. pres. right-hand cross-rail 63 cm.

HOLES

Position in rear side-rail from left of bed:
1. c 33-41 cm.;
2. c 152-158 cm.
Position in cross-rail from front of rear side-rail:
35-44 cm.

BOARDS

H. rear board above bedframe: 40.5 cm. (l) and 41 cm. (r).
L. rear board 190 cm. (u.) and 210 cm. (t.).

Thickness rear board 1.5 cm.

H. right-hand board 42 cm. (along slanting line)
L. max. pres. right-hand board 83 cm.
Thickness right-hand board 1.5 cm.
D. rebate in bedframe c 1 cm.

MOULDING

H. 7 cm.
W. 4 cm.

PANELLING ON REAR BOARD

Position (from left to right):
stile 1: 0-40 mm.;
panel 1: 90-325 mm.;
stile 2: 360-396 mm.;
panel 2: 436-680 mm.;
stile 3: 716-750 mm.;
panel 3: 790-1026 mm.;

stile 4: 1070-1110 mm.;
 panel 4: 1150-1385 mm.;
 stile 5: 1421-1460 mm.;
 panel 5: 1490-1725 mm.;
 stile 6: 1760-1795 mm.;
 panel 6: 1830 mm.-end.

Position from top of rear side-rail:
 165 mm. start of recess and stiles;
 205 mm. start of panels;
 315 mm. end of panels;
 355 mm. end of recess and stiles.

4. See appendix 1: 3-9-1937.
5. Maiuri 1958, 443 and figures 28 and 390; Packer 1975, 141; Faust 1989, 174 Kat. 127 (who mistakenly says that the board was stretched with leather); Mols 1993, 490 nota 12.

10

1. WOODEN BED, figs. 66-71.
 - 2.1.1. VI 19-23, Collegio degli Augustali.
 - 2.1.2. Small side-room in the south-west corner, separated from the main room of the building by a wall of *opus craticium*; north wall (Guadagno 1983, 163 fig. 5).
 - 2.1.3. Living room which was probably also used for sleeping and eating (perhaps a service room for the staff).
 - 2.2. Probably January 1961 (exact date unknown).
 - 2.3. There is a window and door in the north wall, which is of *opus craticium*. The bed stands in the north-east corner along this wall. At the time of the eruption someone was lying in this bed with their head to the east. A wooden table (cat.nr. 17) was also found in the room. Guadagno 1983, 163 suggests that the room had been turned into a service room after some rebuilding; Ostrow 1985, 77-78 calls it the room of the 'building's custodian'.
- 3.1. In situ.
- 3.2. A skeleton was found preserved on the bed. For this reason, the bed has only been excavated down to the upper surface of the bedframe.

A rectangular bedframe composed of four rails rested on four legs. The front side-rail is missing altogether and only fragments of the left-hand cross-rail have survived. In the front left-hand corner we can still see a tenon, part of a complicated mortise-and-tenon joint (fig. 67 F) to the missing front side-rail. Signs of a similar joint were found in the front on the right. At the back, however, the two cross-rails are fitted to the rear side-rail, which runs the full length of the bed, using ordinary mortise-and-tenon joints. The outer face of the left-hand cross-rail slants in towards the top, and it is almost certain that the front side-rail had the same form since the end of the left-hand cross-rail is cut to this shape.

Within the bedframe, we can see part of a slat running to the rear side-rail. It is visible at the two ends and is attached to the cross-rails with mortise-and-tenon joints (figs. 70-71). These fragments are part of a slatted base (Grid A) which once supported the mattress. Two holes in the right-hand cross-rail correspond to these fragments and were probably mortises cut to take tenons from further slats. However, it has to be said that there are no visible traces of the corresponding mortises in the left-hand cross-rail. It is possible that a Grid B construction once supported the 'slatted base' and strengthened the bedframe, but nothing of this can be seen.

Fragments of boards are mounted on the bedframe on the right and at the rear (fig. 71). Since the tops of these remains are nowhere flat, we can assume that the boards were once

higher. It is of course not possible to establish their original height. Fragments of mouldings between the boards and the bedframe remain in the right-hand rear corner. These are mitred into the corner. The side board runs through to the back of the bed, while the rear board butts up to it.

Under the bedframe in the left-hand front corner the upper part of one of the legs is uncovered. (figs. 67 G, 68). This consists of two flat, turned elements which identify the leg, in so far as it is visible, as the 'ugly patterns' type (see § 3.2.1). They appear to be made of wood.

- 3.3.1. Wood, carbonized.
- 3.3.4. The only places which provide clear evidence of joints are the corners of the bedframe. In the front the rails were held together with complicated mortise-and-tenon joints and at the back with ordinary mortise-and-tenon joints.
- 3.4.1. In order to prevent the disturbance of the skeleton found upon it, the bed has never been fully excavated. As a result the legs are not visible, except for a small part of the left-hand front leg. Likewise, only a small part of the grid which supported the mattress is uncovered. The front side-rail of the bedframe has disappeared, while the left-hand cross-rail is only partially preserved. The rear and right-hand boards are also badly decayed.
- 3.4.2. After discovery a small retaining wall was built along the front and left of the bed (height 34 cm.) and a glass case placed over the remains. The tops of the boards were also skimmed with cement to bond them to the walls behind.
- 3.5.1. H. c 44.5 cm. (measured from the floor to the top of the bedframe), L. c 209 cm., W. c 112 cm. (n.b. these measurements could not be taken accurately due to the glass case).
- 3.5.2.

<p>BEDFRAME L. rear side-rail 209 cm. L. right-hand cross-rail 112 cm. W. rails 14 cm. H. rails 5 cm.</p> <p>GRID A Position slat from rear of bed: c 30-36 cm. at both ends.</p>	<p>Position of hole in right-hand cross-rail from front of bed: c 30-38 cm.</p> <p>BOARDS H. max. pres. 20 cm. Thickness c 1 cm. Moulding: H. 4 cm.; Moulding: W. 4 cm. (u.) and 2.5 cm. (t.).</p>
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- 5. Deiss 1985, 187; Ostrow 1985, 77-78.

11

- 1. WOODEN ROCKING CRADLE, figs. 77-80.
 - 2.1.1. *Insula Orientalis I 1a*, Casa di M. Primigenius Granianus (Maiuri 1958, 345).
 - 2.1.2. The cradle was found in room E: the precise location is not known.
 - 2.1.3. Living room.
 - 2.2. 26 and 28-3-1940.
 - 2.3. According to Maiuri (1958, 345) the remains of a tiny skeleton were found in the cradle, along

with some remnants of textile ('In una delle stanze si trovò una culla di legno, una di quelle culle a dondolo che conservano da secoli nella tessitura e nella sagoma delle doghe di legno che la compongono, la forma primordiale imposta dalla funzione e dall'uso a cui debbono servire: acquietare il pianto e conciliare il sonno d'un bimbo. Entro quella culla erano le tracce appena riconoscibili d'uno scheletrino... Sulla casa di Marco Pilo Primigenio Graniano pesa il triste mistero di quella culla abbandonata'). The excavation records confirm this. There are remains of textile and leaves preserved in a box which is kept with the cradle, but no longer any trace of the little skeleton. The textile probably comes from the bed clothes and the leaves from the mattress filling. Room E measures 3.60 x 4.65 m. and is slightly trapezoid in shape. The floor has a black-and-white diamond mosaic (cf. Maiuri 1958, 344). Apart from the skeleton of the baby in the cradle, the room also contained five adult skeletons, a child's skeleton and a wall cupboard containing a glass crater, a terracotta 'brucia-profumo', a glass bottle and two dice. On the floor lay an amphora, two bronze coins, a round table (cat.no. 19), 5 terracotta vessels and 7 precious stones, and 2 gems (for these gems see: Pannuti 1983a: cat. 18 and 27, Naples, Museo Nazionale inv. 158863-158864).

- 3.1. Magazzino Archeologico, Herculaneum. Inv.nr. E 3147 (a card in the *Schede*, numbered (5) in pencil, mentions an earlier storage place: 'Collocazione: Casa dell'atrio a mosaico; descrizione: legno, piccola culla di forma rettangolare con i piedi a dondolo; stato: discreto, è completamente carbonizzato e conserva avanzi di materia vegetale').

- 3.2. The cradle consists of a neat rectangular box frame, built up from four vertical uprights linked together on all sides by three matching rows of rails. These are fitted flush to the outside face of the uprights (see the inaccurate reconstruction below, code 3.4.2 and fig. 80 F). In the rectangle formed by the lowest group of rails, six slats are fitted across the cradle, creating a 'slatted base' to support the mattress. The slats are flush with the underside of the supporting rails at the bottom.

The cradle stands upon two lateral rockers, fitted to the uprights across the two ends of the cradle. The rockers end flush with the outsides of the uprights. It is not known whether the curve in the rockers was achieved by steaming or by natural growth.

During the original reconstruction (see below 3.4.2.) each upright was sawn through vertically to accomodate a modern supporting timber. In the recent restoration (1987) these modern pieces were removed and the resulting loss of thickness made good by a layer of paraffin-wax. Similarly, the curved rockers were originally sawn through lengthwise. They too are now partially filled with paraffin-wax.

- 3.3.1. Wood, carbonized. One sample analyzed: *Quercus*.

- 3.3.4. Mortise-and-tenon joints are used throughout.

- 3.4.1. The cradle was found in a large number of fragments. None of the slats are fully intact.

- 3.4.2. During the first reconstruction, which was probably carried out immediately after the discovery, strips of modern wood were placed behind, under or inside various components of the cradle (fig. 74). The original fragments were then attached to them with nails. When, at a later stage, one of the legs of the modern wooden construction threatened to break off, it was bound with cord (fig. 75). During the first reconstruction all the remains were treated with a mixture of paraffin-wax and carbon-powder (fig. 73).

In April 1987 the cradle was dismantled prior to making a new reconstruction to be mounted on a plexiglass frame (figs. 76-77). In the process it first became apparent that the various components of the cradle were assembled from a large number of fragments. This fact had been obscured by the thick layer of paraffin-wax applied during the original reconstruction. It was then discovered that woods with quite different structures had been incorporated into some of the individual sections. One possible explanation, suggested by the restorer Formicola,

is that during the first reconstruction missing fragments were replaced with pieces of antique wood taken from elsewhere in the excavation. Perhaps use was made of timber which was considered unimportant. Carbonized wood may be fragile but when treated with paraffin-wax it hardens sufficiently to be sawn. Indeed, parts of the cradle itself were treated with paraffin-wax and sawn during the first reconstruction. This was done to instal modern slats, some of them even inside the original components. During the 1987 reconstruction the fragments were glued on to a plexiglass frame using UHU+ two-component epoxy adhesive. All the pieces were retained since it was impossible to establish which fragments originally belonged to the cradle and which had been added during the first reconstruction. However, the thick layer of paraffin-wax was omitted, leaving the grain everywhere visible and enabling us to distinguish each fragment clearly (figs. 78-79). Budetta's remark (Budetta/Pagano 1988, 21) that the added pieces have been removed is not correct: only the paraffin-wax has been removed.

In the new reconstruction the end rails have been wrongly replaced on the inside of the posts (fig. 80 F).

3.5.1. H. 492 mm., L. 830-835 mm., W. 503 mm.

3.5.2.

CRADLE

H. min. uprights: 435 mm. (less rounded end);

H. max. uprights: 442 mm.

W. and thickness uprights: 38-42 mm.

H. slats 'slatted base': 18-20 mm.

Position rows of rails (from bottom to top):

1. 187-225 mm.;

2. 298-337 mm.;

3. 414-452 mm.

W. 18-20 mm.

Position slats 'slatted base' (from left to right):

1. 100-140 mm.;

2. 220-260 mm.;

3. 340-378 mm.;

4. 458-498 mm.;

5. 579-618 mm.;

6. 692-731 mm.

W. 18-20 mm.

4. See appendix 1: 26 and 28-3-1940.

5. Maiuri 1958, 345 and fig. 275; Pinto 1963, 7; Richter 1966, 110; De Franciscis 1974, 37 and ill. 34 (he mistakenly gives the find spot as the Casa dell'Atrio a Mosaico); Von Zglinicki 1979, 91-92, 375 and Abb. 206 and 207; De Vos/De Vos 1982, 287; Gore 1984, 564-565; Deiss 1985, 55; Budetta/Pagano 1988, 20-21, cat.nr. 1; Grodde 1989, 117-118 and Abb. 70; Manciola 1989, 9; Mols 1991-1992, 34-37 and figs. 3/4/5; Mastroberto 1992, 146; Mols 1993, 490 and 494 tav. CIX, 1.

12

1. WOODEN COUCH, figs. 81-86.

2.1.1. *Insula Orientalis* II 9, shop.

2.1.2. Back room (not numbered). Maiuri (1958, 462 figs. 416 and 463) refers to it as a 'retro-bottega'. The piece was found in the centre of the room, with the long side parallel to the east wall. It had been raised by the stream of lava and mud and was found approximately 70 cm. above the level of the antique floor.

2.1.3. Dining-room and resting room.

2.2. 21-12-1936.

2.3. The room has a Fourth Style wall decoration of yellow panels on a red background. A stucco

moulding runs above the main zone. There was a door and a high window in the west wall. According to the excavation reports the room also contained a second couch, a terracotta vase (inv. E 1728), a bronze coin (inv. E 1729), a bronze lamp and a wooden bobbin.

3.1. The bed now stands against the east wall.

3.2. The base of the couch is formed by a rectangular bedframe composed of four rails. Only the rear side-rail and parts of the two cross-rails remain. The rear side-rail ran the full length of the couch and the two cross-rails were fitted to it using mortise-and-tenon joints.

Within the bedframe there are remnants of a gate-like construction (Grid B) which served to support the mattress. This grid originally consisted of two stretchers and three ties. The stretchers were fitted to the bedframe using mortise-and-tenon joints (see below, code 3.4.2.). These are now positioned precisely below their original position (fig. 84). All that now remains of Grid B are fragments of the two stretchers. Until quite recently they were still linked by a tie, now in four fragments, which ran parallel to the rear side-rail. There were probably two similar ties. Mortise-and-tenon joints were also used in Grid B (for reconstruction: fig. 81 B-C).

Fragments of boards have been preserved along the top edges of the cross-rails. The boards get gradually thinner towards the top. The right-hand board is horizontal and flat at the top and is probably still at its original height. The left-hand board has crumbled away along the top edge. At the bottom the boards are let into a rebate cut a few millimetres deep into the cross-rails. The rear side-rail has a similar rebate, indicating that it too carried a board (fig. 83). Moreover, the two side boards do not run right to the back of the piece but leave room for a rear board running the full length of the couch. The side boards are assembled from five horizontal, edge-jointed boards. The construction is held together at one end by a grooved slat fitted on tongues at the ends of the boards (figs. 85-86).

3.3.1. Wood, carbonized. Nine samples were taken: eight were *Abies alba* (left-hand board; rear side-rail left; rear side-rail right; Grid B, left-hand stretcher; Grid B, tie; Grid B, right-hand stretcher; right-hand cross-rail; right-hand board). One sample from the left-hand cross-rail could not be unidentified.

3.3.4. All the visible joints in the bedframe and Grid B are mortise-and-tenon joints. The boards are slightly let into the bedframe and are thicker at the base to strengthen the joint.

3.4.1. At present about one third of the original couch is preserved. At the start of 1989 the legs, around two thirds of the bedframe and Grid B, much of the side boards and the entire rear board were missing. By the end of 1989 there was almost nothing left of Grid B.

3.4.2. Soon after the discovery, a metal supporting frame on four legs was fitted below the couch. The side boards were strengthened with wooden panels and the remains were treated with a mixture of paraffin-wax and carbon-powder. There are two holes in the rear side-rail of the bedframe, immediately above the two stretchers of Grid B as located in the reconstruction (fig. 84). These holes are probably the tenons of mortise-and-tenon joints and it is therefore very possible that Grid B is currently positioned too low. The inaccurate reconstruction can be explained in the light of the other beds and couches in Herculaneum. In most cases this type of grid sits below the top plane of the bedframe, but here the two tenons suggest that it may have been flush with the top (reconstruction in fig. 81 B-C).

3.5.1. H. max. pres. 543 mm. (not including legs), L. 2195 mm., W. max. pres. 520 mm. (r.) and 490 mm. (l.) (total W. reconstruction: c 123 cm.)

3.5.2.

BEDFRAME

H. rear side-rail: 4851 mm.
L. rear side-rail: 2195 mm.
W. rear side-rail: 135-142 mm.
H. left-hand cross-rail: c 5 cm.
L. max. pres. left-hand cross-rail: c 35 cm.
W. left-hand cross-rail: c 13 cm.
H. right-hand cross-rail: c 4.5 cm.
L. max. pres. right-hand cross-rail: c 25 cm.

GRID B

Position stretchers (from left to right):

1. 635-710 mm.;
2. 1510-1585 mm.

H. 50 mm.

Ties:

H. 5 cm.;

L. max. pres. 1. c 33 cm.;

L. max. pres. 2. c 11 cm.

Position tie from back of couch: 340-411 mm.

H. 50 mm.

BOARDS

Thickness to 26 mm. above top of bedframe: 36 mm.

Thickness from 85 mm, above top of bedframe: 17 mm.

H. left-hand board above top of bedframe: 430 mm.

H. right-hand board above top of bedframe: 492 mm.

Depth boards let into bedframe: 5 mm.

L. max. pres. left-hand board: 435 mm. (u.).

L. max. pres. left-hand board: 295 mm. (t.).

L. max. pres. right-hand board: 485 mm. (u.).

L. max. pres. right-hand board: 290 mm. (t.).

depth rebate rear side-rail: 5 mm.

W. rebate rear side-rail: 24 mm.

Distance between ends side boards and rear couch: 35 mm.

W. upright: 50 mm.

4. See appendix 1: 21-12-1936.

5. Maiuri 1958, 462 and fig. 419 and tav. XL; De Franciscis 1974, 54 and tav. 66; Packer 1975, 141; Faust 1989, 173 Kat. 122.

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1. WOODEN COUCH figs. 87-93.

- 2.1.1. Insula Orientalis II 10.

- 2.1.2. Room a (Maiuri 1958, 462 fig. 416). East wall. The couch had been raised by the lava flow and was found 70 cm. above level of the the antique floor.

- 2.1.3. Living room and study.

- 2.2. 8-10-1936.

- 2.3. The couch occupies the entire width of the back wall (east) of this small room and approximately two fifths of the room's length. There is a small window in the east wall and a door opening in the west wall. According to Maiuri (1958, 463) a loom and a 'weaving stool' (cat.no. 23 below) were also found in the room, on which basis he describes it as the workroom of a young woman. However, it is far from certain whether these objects did come from this room, since the excavation reports (22-6-1936 to 8-10-1936), which are very thorough, do not mention either of them. The loom is first associated with this room by Horn (1937, 417). It is probable that both the stool and the loom were found elsewhere in Herculaneum and added to the inventory of this room only in modern times. Furthermore the excavation reports mention a young man ('giovanotto') whose skeleton was found partly under the couch, rather than the young woman favoured by Maiuri (1958, 463). Nor do they contain any reference to weaving activity. Other finds which definitely do come from the room were: two bronze candelabra, fifteen terracotta lamps, two bronze lamps, two bronze *strigiles*, various vessels in terracotta, silver, bronze and glass, a herm of Bacchus (white marble), a tufa votive altar, a bronze bell, an alabaster vase, a bronze coin, a box with two bronze and 30 silver coins, an oval glass disc, some precious stones, paste jewellery and bone dice. The walls of the room were plastered. The jewelry is published by Pannuti 1983A (cat. 55, 75, 83, 90, 98, 130, 153, 155, 181, 249, 340,

348, now in Naples, Museo Nazionale, respectively inv. 155873, 155875, 155878, 155884, 155874, 155883, 155877, 155876, 155881, 155882, 155886, 155885) and Scatozza Höricht 1989 (56-67, 76, 84, 91 and 92, cat. 79, 98-120, 144, 150-161, 190-197, box on ground floor with 30 silver coins (inv. E 1571), two bronze coins (E 1569-1570), four glass *unguentaria* (inv. E 1576) and jewelry (inv. E 1572-1574); jewelry (inv. E 1582-1587, E 1591, E 1593, E 1594-1598, E 1605 and E 2582)); the glassware is included in Scatozza Höricht 1986 (cat. 169-171, 195; inv. E 1576 B/C/D, 1576 A).

3.1. Magazzino Archeologico, Herculaneum.

- 3.2. The base of the couch is formed by a rectangular bedframe consisting of four rails. The side-rails run the full length of the couch and the cross-rails are fitted between them. Mortise-and-tenon joints are used throughout the bedframe.

In the centre of the couch a gate-like construction (Grid B) is mounted below the bedframe. This is composed of two ties and five stretchers. The first and fifth stretchers were originally attached to the side-rails of the bedframe, but these joints are now cut by the modern supporting frame. The two outer stretchers are linked by two ties, which in turn are linked by the remaining stretchers. Again, only mortise-and-tenon joints are used. (Grid B is currently hidden from view by a modern wooden panel which carries the remains of the skeleton found on the bed).

Boards are mounted on three sides of the bedframe. They are slightly let into the rails and are mitred into the corners. It is not clear how they were held in place (perhaps by means of glue or dowels). The boards are composed of four or five small boards glued horizontally one above the other. The lower half of the boards is thickened, giving it a slightly S-shaped section, which slopes in towards the couch (fig. 91). The upper half is thinner and stands vertically. Looking from the front of the couch, a part of the forward edge of each side board is cut away at the bottom, giving the impression that the boards are equally thick right the way up. The modelling follows the S-shaped section of the lower boards. Only at the base is the edge of each side board left slightly thicker, turning back into a 'full-stop'. Apart from this cut-away section at the very front of the sideboards, the boards are entirely vertical at the back. A moulding runs along the top edge of the boards. This is filed round and mitred in the corners. The same moulding is fitted to the forward edge of the side boards.

Originally all the conspicuous parts of the couch were veneered. On the top of the bedframe this took the form of two parallel borders raised c 2 mm. above the surface (fig. 90). On the front of the front side-rail a notch runs the full length of the surface indicating the presence of a similar border (in this case probably let into the wood).

The most elaborate veneer is that on the inside of the boards, where geometric patterns are rendered in wood-mosaic. A line of meanders is mirrored across a central horizontal axis. The doubles meanders thus formed produce a swastika motif which is repeated seven times on the side boards and fourteen times on the rear board. In the centre of the rear board the double meanders are interrupted by a simple central decoration of isosceles triangles facing away from each other (see fig. 88 B). Below each swastika is a rectangle within which are triangular and trapezoid forms. The central triangle motif and the rectangle below it are slightly wider than the other swastika/rectangle pairings.

The pieces from which the wood-mosaic is build up are chosen to create contrasts between the various elements in the design, for example by mirroring the grain or by alternating light and dark pieces.

- 3.3.1. Wood, carbonized. The veneer is not of the same wood as the couch itself. Both types of wood are carbonized. One sample from a board (not the veneer) has been analyzed: *Abies alba*.
- 3.3.4. Mortise-and-tenon joints were used throughout the bedframe and Grid B. The joints between Grid B and the bedframe have been cut by the modern metal frame and are therefore no longer visible. The boards are let into the rails of the bedframe and are thickened at the bottom to

provide a larger gluing surface. The boards are partly mitred in the corners to ensure a good fit.

- 3.4.1. The only parts of the couch which appear to be missing are the legs and pieces of the decorative veneer. The legs are indeed mentioned in the excavation reports. They were turned.

- 3.4.2. After the discovery a metal frame on four legs was constructed to support the couch (height 30 cm.). Wooden panels were fitted against the back of the boards. The remains were treated with a mixture of paraffin-wax and carbon-powder. A new reconstruction was begun in 1989 and is not yet complete.

- 3.5.1. H. 553 mm. (not including legs), L. 1950 mm., W. 1060 mm.

- 3.5.2.

BEDFRAME

H. 67 mm.

L. side-rails: 1950 mm.

W. side-rails: 128 mm.

W. cross-rails: 115 mm.

Notch forward face front side-rail (from below):
30-36 mm.

Thickening on surface front side-rail (from back
to front):

20-25 mm. and 35-40 mm.

GRID B

Position stretchers (from left to right):

1. 434-504 mm.;

2. 680-751 mm.;

3. 932-1002 mm.;

4. 1206-1272 mm.;

5. 1500-1566 mm.

Position ties (from front to back):

1. 230-305 mm.;

2. 765-825 mm.

BOARDS

H. 486 mm. = 482 mm. (above top of bedframe) and 4 mm. (in rebate).

Thickness rear board: max. 60 mm. (u.).

Thickness rear board: min. 12 mm. (t.).

Thickness side board: max. 52 mm. (u.)

Width notch in front edge side boards: max. 55 mm.

Position decoration on boards (from below) from top of
bedframe:

134-181 mm. (rectangle);

235-334 mm. (meander);

356-469 mm. (meander).

Thickness veneer: 1.5 mm.

Rounded moulding on board edges: H. max. 4 mm.

4. See appendix 1: 8-10-1936.

5. Horn 1937, 417; Maiuri 1958, 463 and fig. 420; Kusch 1960, 20 and Abb. 31; Maiuri 1964, 57; Grant 1971, 32; Packer 1975, 141; Deiss 1985, 126 and fig. on p. 129; Budetta/Pagano 1988, 22; Budetta 1989, 267; Faust 1989, 173 Kat. 123; Mols 1993, 490 nota 12.

TABLES

14

1. WOODEN TABLE, figs. 94-96.
- 2.1.1. Probably IV 1-2, Casa dell'Atrio a Mosaico, see *Schede* (card numbered 4 in pencil): 'Coll.: Casa dell'atrio a mosaico; Descrizione: legno, tavolino (mensola) rotondo a tre piedi decorati con protomi di feline scolpite nel legno; Provenienza: incerta. Altezza m. 0,67; Diam. del piano m. 0,57; Stato: discreto, è completamente carbonizzato e conserva avanzi di materia vegetale' (we have been unable to find any trace of the 'materia vegetale'). For many years the piece has been displayed in room 9 of the house in question.
- 2.2. 1929-1930, exact date unknown.
- 3.1. Magazzino Archeologico, Herculaneum.
- 3.2. A modern frame (see below, code 3.4.2.) supports the remains of a round wooden table on three legs. The legs are assembled from three elements whose original form can be reconstructed. Element 1 runs from the base to about two thirds height and has the form of a lion's leg. From claw to ankle the back of the lion's leg stands almost vertical, while between the ankle and the knee joint it curves outwards in a semicircle. At the top there are traces of a floral decoration. Element 1 probably ended in a bunch of acanthus foliage, from which Element 2 sprouted.

Element 2 has the form of a griffin's head which stands out from the leg at the front. The remains on one of the legs indicate that the griffin had a protruding tongue. Presumably the same was true of the other legs.

Element 3 rounds off the leg at the top. Above the griffin's head the leg becomes somewhat thicker and is crowned by something like a capital. The fronts of the legs run without interruption into the lower edge of the round tabletop, the diameter of which increases gradually from below. It is reconstructed from several fragments and is in a very poor condition. It is not possible to check whether all the fragments are original.
- 3.3.1. Wood, carbonized.
- 3.3.4. All the original joints have been cut to accomodate the modern frame (see below, code 3.4.2.) and can therefore no longer be studied. We assume that the legs were attached to the tabletop with mortise-and-tenon joints.
- 3.4.1. Parts are missing from each of the legs. The bottom of one has disappeared to a height of c 10 cm., although fragments of it still exist and are kept with the table. In another, c 4 cm. are missing at the bottom. The third has lost a small part of the claw at the base and most of the griffin's head a little higher up. Furthermore, the original joints between the legs and the tabletop no longer exist as these are cut by the modern frame. Finally, although for structural reasons, stretchers must have been fitted, no trace of them remains; they would have been positioned at about the same height as the rungs of the modern frame.
- 3.4.2. To hold the remains of the table together after its discovery, a supporting framework of metal rods was made to which the legs were attached. At a height of 38 cm. the rods are joined by rungs, which are at right angles to the backs of the legs and converge in the middle. At the top the rods are screwed into a modern wooden plate which supports the remains of the tabletop. For the sake of preservation the wooden remains have been treated with paraffin-wax mixed with carbon-powder.

3.5.1. H. max. 679 mm., Diam. tabletop max. 571 mm.

3.5.2.

LEGS

H. 635 mm.

Composition (from bottom to top):

Element 1: 0-c 36.5 cm.;

= claw: 0-4 cm.;

= ankle: 4-24 cm.;

Element 2: c 36.5-c 50 cm.;

Element 3: c 50-63.5 cm.

D. at height of claw: 7 cm.

W. at height of claw: 5 cm.

D. just above claw: 3 cm.

D. at height of ankle: 7 cm.

W. at height of ankle: 4,5 cm.

D. underside knee: 7 cm.

W. underside knee: 5 cm.

D. at height of griffin head: max. 9 cm.

W. Element 3 just above griffin head: 18 mm.

D. Element 3 just above griffin head: 45 mm.

D. Element 3: from 557 to 635: 55 mm.(u.)
and 73 mm. (t.).

W. Element 3: from 557 to 635: 48 mm.

D. from a perpendicular taken from top of leg at the back,
to the claw: 50 mm.;

to the ankle: 45 mm.;

to the hollow under the knee: max. 70 mm.;

to the knee: 30 mm.;

to the head: 25 mm.

TABLETOP

Diam. underside: 492 mm.

Diam. topside: 571 mm.

H. 44 mm.

5. De Franciscis 1974, 35 (ill.) and 37; Vulina/Wasowicz 1974, 167; Tran Tam Tinh 1988, 104.

15

1. WOODEN TABLE, figs. 97-101.

2.1.1. V 5, Casa del Mobilio Carbonizzato.

2.1.2. Room 8 (Maiuri 1958, 256 fig. 203). One of the *Schede* cards gives the find spot as unknown, which is curious (see code 3.4.2).

2.1.3. Dining-room and rest room.

2.2. 10-2-1933 and 31-3-1933.

2.3. See cat.no. 7, code 2.3.

3.1. Magazzino Archeologico, Herculaneum. Inv. E 2052.

3.2. A round wooden table originally on three legs. One leg is fully preserved. The legs were composed of two elements. The lower section (element 1) is in the form of a stylized dog leg. The claws of the dog stand on a low base. The leg curves slightly as it rises. Element 1 is rounded at the top, with circular sides upon which traces of a carved volute can be distinguished.

According to Maiuri, the legs carried a greyhound head decoration above element 1 (Maiuri 1958, 260: 'Poco discosto si rinvenne anche in questa stanza una trapeza in legno con i piedi elegantemente arcuati e decorati con teste scolpite di levrieri'). However, it seems as if he is confusing this table with others in Herculaneum. There is no decoration here and the smooth surface of the leg indicates that there never was.

Above element 1 the leg is smooth and almost vertical until it develops into something like a capital, with the front and sides of the leg sloping outwards (element 3, see § 3.3). The width of element 1 increases as it rises. This movement is clearly interrupted where the leg meets element 3, which is much thinner, and then gradually resumes. Seen as a whole, the leg slopes markedly inwards.

The tabletop overhangs the leg by a few centimetres and like the rest of the table is reconstructed from various fragments. The edge carries a moulding, which recedes towards the top. The joints between the legs and the tabletop are not visible, but mortise-and-tenon joints were probably used.

A stretcher was attached to the back of each leg (figs. 97 C-G and 99). The joint is here cut by the modern frame, making it impossible to establish whether the stretchers were accurately replaced during the reconstruction. Any deviation could not be great. The stretchers broaden towards the middle and end in arrowheads with points of 120 degrees, so that they fit precisely together. They also thicken just before the 'arrowheads' to give a flowing curve to the central joint.

Precisely at the mid-point where the stretchers meet there is a vertical round hole in which was found the remains of a pin. This was attached at the top and the bottom to two larger pieces, now missing. The whole construction clamped the stretchers together at the point where they met. We can deduce from the round recess which is still visible on the top of the converging stretchers that the topmost missing piece had a circular base, and could well have resembled the boss which appears in the same position in cat.no. 18. No traces of a corresponding boss can be seen on the underside since the spot is concealed by the modern frame. A reconstruction drawing of this type of joint is provided in fig. 97 F.

3.3.1. Wood, carbonized. Two samples were analyzed: one from the leg - *Buxus*; the other from the tabletop - *Juglans*.

3.3.4. The original joints between the legs and the tabletop and between the stretchers and the legs are no longer visible due to the modern reconstruction (see below, code 3.4.2.). The central joint of the stretchers can still be seen. The stretchers here end in points, each with an angle of 120 degrees, which enables them to fit precisely together (fig. 97 C-G). At the central point there is a small round hole. This still contains the remains of a pin which probably fitted into two bosses clamping the joint together.

3.4.1. Small pieces are missing throughout the table. Three large pieces and twenty smaller fragments of one leg are preserved separately from the table. A fragment is missing from a second leg just below the tabletop.

3.4.2. The table is reconstructed from a large number of fragments. This is confirmed by the *Schede* (-numbered 1 in pencil): 'Coll.: Casa del mobilio carbonizzato. Descrizione: Legno. Tavolino rotondo (mensola) a tre piedi terminanti a zampe levrieri. Provenienza incerta. Altezza m. 0,64. Diam. piano m. 0,40. Stato: Discreto, è carbonizzato ed in parte ricostruito'. To hold the fragments together a modern metal framework runs behind the legs and below the stretchers and a wooden plate has been screwed against the underside of the tabletop. For preservation purposes the table has been treated with a mixture of paraffin-wax and carbon-powder. A cord has at some point been bound around one of the legs, which must have been threatening to collapse.

3.5.1. H. 641 mm.
Diam. tabletop max. 422 mm.

3.5.2.

H. legs: 612 mm.
Composition legs (from below):
element 1: 0-c 45 cm.;
 base: 0-5 mm.;
 claw: 5-34 mm.;
 volute: 39-c 45 cm.;
element 3: c 45 cm.-61.2 cm.

W. claw and base: 50 mm.

D. claw: 78 mm.
W. just above claw: 30 mm.
D. just above claw: 20 mm.
D. just below volute: 35 mm.
W. at height of volute: 45 mm.
D. at height of volute: 70 mm.
W. just above volute: 30 mm.
D. just above volute: 28-31-40 mm.
W. element 3 to 594 mm.: 40 mm.

D. element 3 to 594 mm.: 40 mm.
 W. just below tabletop: 60 mm.
 D. just below tabletop: 60 mm.
 Distance between back of leg below tabletop
 and front point of claw: 248 mm.

STRETCHERS

Position underside: 423 mm.
 H. 10 mm.
 L. c 145 mm.
 W. just behind legs: 10 mm.
 W. at 'arrowheads': 21 mm.
 Diam. notch for boss: 30 mm.
 Diam. hole for pin: 7 mm.

Distances from perpendicular taken from the back of
 the top of the leg:
 from back of claw: 170 mm.
 from middle of element 1: 85 mm.
 from top of element 1: 35 mm.
 from beginning of element 3: 10 mm.

TABLETOP

Diam.: 390 mm. (t.).
 Diam.: 422 mm. (u.).
 Thickness: 29 mm.
 The tabletop projects 60 mm. in front of legs (at height 612
 mm.)

4. See appendix 1: 10-2-1933 and 31-3-1933.
5. Illustrazione Italiana 1933; Felletti Maj 1940, 57; Liversidge 1955, 47-48, 50; Maiuri 1958, 260 and fig. 207; Maiuri 1964, 43; Vulina/Wasowicz 1974, 167 (they speak about: 'pieds couronnés de têtes de lévriers'); Zefiro 1979, 56; Deiss 1985, 109-110 (following Maiuri, Deiss refers to 'Greyhound heads'); Tran Tam Tinh 1988, 104 (Tran Tam Tinh thinks the legs are decorated with 'têtes de lion'); Mastroberardo 1992, 146. An old Alinari-photograph of the room with contents is in circulation and appears often in archaeological publications.

16

1. WOODEN TABLE, figs. 102-105.
 - 2.1.1. V 8, Casa del Bel Cortile (as reported on a note kept with the table).
 - 2.2. 1937-1938, exact date unknown.
 - 3.1. Magazzino Archeologico, Herculaneum. Inv. E 3152 (see Budetta/Pagano 1988, 30).
 - 3.2. Table on three legs with crescent-shaped tabletop. Each leg was composed of three elements. The lowest (element 1) has the form of an animal leg, probably a lion's. From a naturalistic claw the leg runs upwards in a fluent, slightly S-shaped curve. The ankle joint is so stylized that no break in the line occurs. The stylized form is continued into a imaginative cylindrical conclusion with volutes on both sides.

Above the volute the second element begins. This runs vertically upwards, adorned in the front with a human head (its eyes inlaid in ivory) which stands almost entirely free of the leg itself. It is of a young man, his head adorned with a wreath, who probably represents a young Dionysus/Bacchus.

The top of the leg is shaped like a capital (element 3). It fits to the section which runs on behind the head and protrudes sharply out from it at the front and the sides.

The form of the tabletop is unique: a crescent, or an oval cut in half widthwise by a slightly 'concave' line. Under each of the two 'wings' is a leg facing in the same direction as the point of the tabletop. The third leg once stood in the centre of the 'convex' side, but this has not survived.
 - 3.3.1. Wood, carbonized.
 - 3.3.3. The legs are decorated with human heads of which the eyes were inlaid in ivory.

- 3.3.4. All the original joints are cut by the modern supporting frame.
- 3.4.1. One leg, apart from a few small fragments, is missing. A second leg lacks the 'capital' of element 3 and part of the middle of element 1. This last section has been added in a different material during the modern period. The third leg is modern and is without the animal claw at the base. Although no trace of them remains, the legs must originally have been linked by stretchers. These were probably positioned in the same place as the rungs of the modern frame, i.e. behind the volutes of element 1. The joints between the legs and the tabletop have been cut by the modern frame. All but one of the inlaid ivory eyes have disappeared from the heads of element 2.
- 3.4.2. The table was found in fragments and set up on a wood and metal frame. The legs stand on a metal plate from which metal strips run upwards along the back of the legs. At a height of c 39 cm. the strips are linked by three modern rungs which meet in the middle. At the top the strips are screwed into a modern wooden plate which serves to support the remains of the tabletop. The wood was treated with a mixture of paraffin-wax and carbon-powder, but most of this layer was removed in 1988 when the piece was cleaned.
- 3.5.1. H. 583 mm. (increased to 590 mm. by the modern wooden plate under tabletop.), L. max. tabletop 36 cm., W. tabletop 27.5 cm. (through the centre).
- 3.5.2.
- | | |
|--|---|
| LEGS | D. at nose: 68 mm. |
| H. 528 mm. | W. at nose: 40 mm. |
| consisting of (from the bottom): | W. at join elements 2 and 3: 25 mm. |
| element 1: 0-430 mm.; | D. 'capital': 51 mm. |
| claw: 0-55 mm.; | W. 'capital': 61 mm. |
| volute/knee: 373-430 mm.; | Distances from a perpendicular taken from front edge of |
| element 2: 430-481 mm.; | tabletop: |
| element 3: 481-528 mm.; | at claw: 20 mm.; |
| 'capital': 515-528 mm. | at 70 mm.: 52 mm.; |
| | at 300 mm.: 10 mm.; |
| D. claw: 55 mm. | at 430 mm.: 25 mm. (neck); |
| W. claw: 40 mm. | at nose: 12 mm.; |
| D. at 70 mm.: 20 mm. | at bottom of element 3: 52 mm.; |
| W. at 70 mm.: 30 mm. | at top of element 3: 32 mm. |
| D. at 373 mm.: D. 40 mm. | |
| W. at 373 mm.: W. 35 mm. | TABLETOP |
| D. centre volute: 65 mm. | H. 55 mm. (modern 62 mm.) |
| W. centre volute: 40 mm. | W. 360 mm. |
| D. at join of elements 1 and 2: 33 mm. | L. 275 mm. |
| D. at neck: 60 mm. | Depth of curve from imaginary saw line |
| W. at neck: 23 mm. | (half oval): max. 38 mm. |
5. Catalano 1966, 9; Vulina/Wasowicz 1974, 167 and nt. 38 (they mistakenly think that only half the tabletop was preserved and that the table was originally round. The legs are referred to as: 'ornés d'un buste féminin'); Budetta 1987, 200, tav. 91; Budetta/Pagano 1988, 30-31, cat.nr. 6; Tran Tam Tinh 1988, 104.

17

1. WOODEN TABLE, figs. 106-110.
2. VI 19-23, Collegio degli Augustali. Budetta/Pagano 1988 (24 and 25) mistakenly give the find spot as the Casa del Mobilio Carbonizzato.

- 2.1.2. Small side room in the south-west corner, separated from the main room of the building by a wall of *opus craticium* (Guadagno 1983, 163 fig. 5).
- 2.1.3. Living room, probably also used for sleeping and eating (perhaps a room for servants).
- 2.2. 20-1-1961.
- 2.3. See cat.no. 10, code 2.3.
- 3.1. Magazzino Archeologico, Herculaneum. Inv. E 2236 (old) / E 3149 (new). The inventory list states: 'Inv. 2236. Data del reperto: 20-1-1961. Posto del reperto: Collegio degli Augustali, ambiente a, a destra entrante dal III Cardo. Descrizione: Legno (carb.). Tavolino a piano rotondo con due piedi rintagliati raffiguranti due zampe e testa e corpo di levriero. Manca il III piede'. The piece was given a new inventory number in Budetta/Pagano 1988 (24-25).
- 3.2. Round table, originally on three legs. The remains of two legs are preserved. The wood joints can no longer be studied as they were cut during the reconstruction carried out after the excavation (see below, code 3.4.2).

Even though many elements of the legs are missing, it is still possible to make a reconstruction (fig. 106). After discovery it proved possible to fully replace the missing leg with a cast. Each leg consisted of three elements. Element 1 (at the bottom) had the form of a dog's leg up to the knee joint. The leg curves slightly forward above the ankle, reflecting the actual form of a dog's leg between the ankle and the knee. The modelling is very naturalistic, with strongly pronounced bones. The claw is cleft, forming a pair of double toes. Element 1 ends just below the dog's knee.

Element 2, which only survives in one leg, partly overlaps element 1. A decoration in the form of a lightly stylized acanthus calyx (now very weathered) was fitted to the front of the leg just above the ankle joint. On the sides of the leg, at the same height as the bottom of the leaves, part of the body of an animal can be seen. At the top of the calyx the entire front part of the animal emerges. It has shaggy fur and resembles a molossian dog, with a small head in relation to a large body, a long, pointed nose and large, long ears. The dog is so modelled that he appears to be running up the leg. While the dog's body is carved in relief on the table-leg, the whole of the head stands free.

Element 3 begins behind the dog's head. It is rectangular in section and widens from the bottom on all sides except the back. It is crowned by a block-like capital.

On top of the three legs rests a round tabletop which was reconstructed from many fragments. It is moulded around the edge, the diameter gradually increasing from below. The fronts of the three legs fit precisely to the lower edge of the tabletop.
- 3.3.1. Wood, carbonized. One sample was taken from one of the legs: *Carpinus*.
- 3.3.4. All the joints are cut by the modern supporting frame (see below, code 3.4.2.).
- 3.4.1. No leg is fully preserved.
 - the bottom 16 cm. has disappeared from one leg;
 - the decoration on another is missing;
 - the third has entirely disappeared.

No trace of any stretchers remains, but they must have existed for structural reasons (see § 3.3).
- 3.4.2. After the discovery the missing leg was replaced by a cement cast. The missing lower section of a second leg was also filled in using a cast. The casts were painted a reddish brown. A metal frame was fitted below and behind the legs and a wooden panel was placed under the tabletop. The tabletop has been reconstructed from many fragments. The piece is described as follows in

the *Schede*: 'Collocazione: già nell'officina restauro. Materiale: carbone. Oggetto: Legno - Tavolo a 3 piedi con piano rotondo. Provenienza: Collegio degli Augustali, ambiente a destra entrando dal III Cardo. Dimensioni: H. 0,64; Spessore piano 0,04; Diam. piano 0,52. Stato: frammentario, manca di un piede e di parti di un altro. Il piede è tutto screpolato. Restauro: reintegrato con pezzo colorato di marrone il piede mancante e parte del secondo piede; reintegrato il piano rivestito di cera. Descrizione: Tavolo a tre piedi (uno e parte del secondo restaurati e reintegrati, con piano circolare modanato al bordo. I piedi sono decorati da protomi di levrieri con la testa posta in direzione dell'attacco del piede al piano ed ...' (illegible). This card thus contains information about the original restoration. During a new restoration in 1988 the casts were removed and the antique remains cleaned and mounted on a plexiglass frame (using UHU+ two component epoxy adhesive).

3.5.1. H. 640 mm., Diam. tabletop max. 518 mm.

3.5.2.

LEGS

H. legs 605 mm.

Composition (from the bottom):

element 1: 0-c 33.5 cm.;

claw: 0-5.5 cm.;

ankle joint: c 22 cm.;

element 2: c 33.5-53 cm.;

acanthus: c 19-32 cm.;

dog: c 30-51 cm.;

element 3: 53 cm.-60.5 cm.;

= block: 524-605 mm.

W. claw (f.): 55 mm.

W. claw (c.): 70 mm.

D. claw max.: 90 mm.

W. 30 mm. (claw)

- increasing to 70 mm. (ankle)

D. above claw: 35 mm.

- increasing to 90 mm. (ankle)

W. knee joint: 75 mm.

D. knee joint: 85 mm.

W. at 370 mm.: 75 mm.

D. at 370 mm.: 87 mm.

W. at 400 mm.: 75 mm.

D. at height 400 mm.: 53 mm. (the leg itself)
and 28 mm. (dog's head)

W. at 500 mm.: 48 mm.

D. at 500 mm.: 62 mm. (leg) and 15 mm. (head)

W. element 3 at H. 532-542 mm.: 75 mm.

D. element 3 at H. 532-542 mm.: 78 mm.

W. element 3 at H. 542-605 mm.: 72 mm.

D. element 3 at H. 542-605 mm.: 82 mm.

TABLETOP

Diam. underside: 462 mm.

Diam. topside: 518 mm.

H.: 35 mm.

Mouldings:

0-10 mm.: increase diam.: 462 to 482 mm.;

10-12 mm.: diam. 482 mm.;

12-22 mm.: increase diam. from 482 to 510 mm.;

22-35 mm.: diam. 518 mm.

Distances from a perpendicular taken from front edge
of tabletop:

at 165 mm.: 80 mm. (begin) and 145 mm. (end);

at 270 mm.: 25 mm. (begin) and 101 mm. (end);

at 400 mm.: 20-48 mm. (dog's head) and 65-118 mm.

(leg);

at 500 mm.: 20-35 mm. (dog's nose) and 50-112 mm.

(leg);

at 605 mm.: 28-110 mm.

5. Vaulina/Wasowicz 1974, 167; Deiss 1985, 187; Budetta/Pagano 1988, 24-25, cat.nr. 3; Talamo Vattimo/Cima di Puolo 1990, 66.

18

1. WOODEN TABLE, figs. 111-114.

2.1 Probably Casa dell'Atrio Corinzio (V 30). The first reference to this find spot appears in J. Liversidge (1950, 26). For many years the table was displayed in a glass case in room 1 of this house, to the north of the *fauces*. This is apparent from a photograph published in: Maiuri 1964, 49-50. The *Descrizione di ambienti* of the house (end 1933, see appendix 3) mentions the discovery of a wooden table, but not the room in which it was found nor any details of the table itself.

- 2.2. 1933 (exact date unknown).
- 3.1. Magazzino Archeologico, Herculaneum. Inv. E 3150.
- 3.2. Round wooden table on three legs. Only two legs and the tabletop now remain. The legs are composed of three elements. Element 1 is shaped like the leg of a lion up to the knee joint. From the claw to the ankle joint the leg is almost vertical. Above this it curves sharply to the front, reflecting the bend of a lion's rear leg between the ankle and knee joints.
- It looks very much as if the transition between elements 1 and 2 is marked by an acanthus calyx, but this is not certain as the legs are very poorly preserved at this point. Element 2 has the form of a griffin's head with a long protruding tongue. The point of the tongue rests on top of the curve of element 1. The heads are pinched and have close collars of mane. The eyes are inlaid in ivory and the heads are crowned by sharply pointed ears, which form the highest point of element 2.
- Above the curve of element 1, the back of the leg again runs almost vertical. When the line is projected downwards, it ends more or less at the front of the lion's claw. Thus, elements 2 and 3 clearly project beyond element 1. Element 3 is square in section and fits to the front edge of the tabletop. It resembles a block-like capital.
- Stretchers were fastened just behind the griffin's heads (fig. 114 C-F). They meet in the middle, their ends cut at angles of 120° to provide a precise fit. At the top there is a round moulded boss which has been fashioned on the lathe.
- The round tabletop is reconstructed from a large number of fragments. The moulding around the edge recedes sharply underneath.
- 3.3.1. Wood, carbonized.
- 3.3.3. The eyes of the griffin's are inlaid in ivory.
- 3.3.4. All the original joints between the legs and the tabletop and between the stretchers and the legs are cut by the modern supporting frame (see below, code 3.4.2.). The only joint to have (partially) survived is at the meeting of the stretchers. These end in points of 120°, giving them a precise fit. Above the join is a moulded boss which would have enlarged the available gluing surface. There was possibly another boss on the underside, with a pin dropped through the joint linking the two (see cat.no. 15). This would have clamped the stretchers together.
- 3.4.1. One of the legs is missing entirely. The joints between the legs and the tabletop and those between the stretchers and the legs no longer exist (see below, code 3.4.2.). The edges of the tabletop are slightly crumbled.
- 3.4.2. After the discovery a metal frame was constructed to support the remains of the piece. It sits underneath and behind the legs. A modern wooden plate is screwed on top of the frame to support the tabletop. All the wooden remains are treated with a mixture of paraffin-wax and carbon-powder. In the reconstruction the tabletop does not rest on top of the legs for reasons which are unclear. The tabletop has been assembled from fragments and many missing pieces appear to have been filled in. It is possible that antique wood found elsewhere in the excavations was used for this purpose. The joints between the stretchers and the three legs are cut by the modern frame, so it is not certain whether the stretchers have been correctly positioned in the reconstruction. Their original position would not have been much different.
- 3.5.1. H. max. 547 mm., Diam. max. tabletop 45 cm.
- 3.5.2.
- | | |
|-------------------------------------|--------------------------|
| LEGS | element 1: 0-292 mm.; |
| H. max. pres. legs: 494 and 501 mm. | = claw: 0-30 mm.; |
| Consisting of (from the bottom): | H. ankle joint: 130 mm.; |

H. knee joint: 265 mm.;
 element 2: 292 mm.-c 40 cm.;
 element 3: c 40-c 50 cm. = 'block'.

D. at claw: 60 mm.
 W. at claw: 45 mm.
 D. above claw: 29 mm.
 W. above claw: 23 mm.
 D. below ankle: 33 mm.
 W. below ankle: 30 mm.
 D. at ankle: 95 mm.
 W. at ankle: 30 mm.
 D. at middle of curve
 between ankle and knee: 56 mm.
 W. at middle of curve
 between ankle and knee: 30 mm.
 D. at knee: 85 mm.
 W. at knee: 30 mm.
 D. at griffin's neck: 35 mm.
 W. at griffin's neck: 25 mm.
 D. at griffin's head: 70 mm. (head 37 mm.)
 W. at griffin's head: 35 mm.

D. 'block': 45 mm.
 W. 'block': 32 mm.

Distances from a perpendicular taken from the back of the
 leg at the top:
 at claw: -20 mm.;
 at ankle: -25 mm.;
 at middle of curve between ankle and knee: + 55 mm.;
 at knee: + 10 mm.

STRETCHERS

Position (from floor to underside): 278 mm.
 H.: 18 mm.
 Thickness just behind leg: 17 mm.
 Thickness at point: 29 mm.
 H. boss: 21 mm.
 Diam. max. boss: 23 mm.

TABLETOP

Thickness: 29 mm.
 Diam. underside: 380 mm.
 Diam. topside: 450 mm.

5. Liversidge 1950, 26; Liversidge 1955, 40 and 47; Maiuri 1964, 49-50; Vulina/Wasowicz 1974, 167; Deiss 1985, 109 (Deiss gives the find spot as the Casa del Sacello di Legno); Budetta/ Pagano 1988, 26-27, cat.nr. 4 and figs. on p. 98 and 99; Tran Tam Tinh 1988, 104; Mastroberardo 1992, 146; Mols 1993, 491 and 498, tav. CXIII, 1.

19

1. WOODEN TABLE, figs. 115-118.
 - 2.1.1. *Insula Orientalis* I 1a, Casa di M. Pilus Primigenius Granius.
 - 2.1.2. The table was probably found in room E (cf. Maiuri 1958, 271), but the precise position is not known.
 - 2.1.3. Living room.
 - 2.2. 3-4-1940.
 - 2.3. See cat.no. 11, code 2.3.
 - 3.1. Magazzino Archeologico, Herculaneum. Inv. E 2052.
 - 3.2. Round wooden table on three legs. The legs were originally composed of 3 elements. Element 1 had the form of an animal leg as far as the knee joint (element 1). In each leg the lower part has been lost and all that remains of the element 1 is the upper part of the curve between the ankle and knee joints. Element 1 was partially overlapped by element 2, which had the form of a running greyhound with the head facing upwards. This decoration survives on only one of the legs. The back of the animal is still part of the table leg, but the dog gradually emerges as it rises and finally appears to be climbing the leg. The head stands almost entirely free. Element 3, little more than a block, comes above this, but its detail can no longer be studied due to a poor state of preservation.

The three legs were linked immediately below the tabletop by two rails. One of them links the leg with the preserved greyhound to another leg. The other fits square to the middle of the

first and runs to the third leg. Mortise-and-tenon joints appear to have been used between the rails and the legs and between the two rails.

The round tabletop originally rested directly on the legs and the rails. However, a modern wooden plate has been placed between the legs and the tabletop to strengthen the latter (see below, code 3.4.2.). The original joints were probably mortise-and-tenon joints with glue. For about half the thickness of the wood the diameter of the tabletop increases sharply from below (i.e. a steeply receded moulding. Above this the edge was vertical, but this part has now crumbled away.

- 3.3.1. Wood, carbonized. One sample was taken but could not be identified.
- 3.3.4. All the original joints are cut by the modern frame and have thus disappeared. There must have been mortise-and-tenon joints between the rails and the legs. The tabletop may have been glued or nailed to the rails but no traces of either have survived.
- 3.4.1. The bottom section of each leg is missing. The greyhound decoration is preserved on only one of the three legs. No trace of any stretchers remains. The tabletop has badly crumbled.
- 3.4.2. A modern metal frame holds the remains in place. It runs along the back of the legs and has three central rungs supported by a metal post. The legs were probably much better preserved when the piece was first discovered, since the metal frame continues the original curve of the legs at the bottom. Furthermore, there are metal plates fitted where the frame touches the floor and these could well have carried the lost bases of the original legs. This would suggest that the table has been correctly reconstructed to its original height.

The legs were probably connected by stretchers (as well as by the rails) although no traces of them were found. These must have been positioned at the same height as the rungs of the modern frame, i.e. immediately above the knee joint of element 1. The construction would have been very weak without them.

A modern wooden plate (thickness 4 mm.) supporting the remains of the tabletop has been fitted over the antique rails. The wood has been treated with a mixture of paraffin-wax and carbon-powder.

- 3.5.1. H. max. pres. 443 mm., Diam. tabletop max. 507 mm.

3.5.2.

LEGS

H. max. pres.: 413 mm.

H. as reconstructed: 607 mm.

N.B. All heights are taken from the top of the legs.

H. max. pres. element 1: 413-285 mm.

H. max. pres. element 2: 413-110 mm.

H. element 3: 110-0 mm.

D. element 1 at 413 mm.: 48 mm.

W. element 1 at 413 mm.: 40 mm.

D. at 285 mm.: 86 mm.

W. at 285 mm.: 45 mm.

D. at 245 mm.: 76 mm.

D. at beginning of dog's head: 16 mm.

D. at 160 mm.: 56 mm. (incl. dog's head)

and 35 mm. (dog's head only)

W. at 160 mm.: 45 mm. (incl. dog's head)

and 18 mm. (dog's head only)

D. just above dog's head: 37 mm.

W. just above dog's head: 28 mm.

D. element 3: 48 mm.

W. element 3: 35 mm.

Distances from a perpendicular taken from back of leg at top:

at 413 mm.: 55 mm.;

at 380 mm.: 62 mm.;

at 285 mm.: 10 mm.

RAILS

H. rail 1: 20 mm.

Max. L. rail 1: c 31 cm.

W. rail 1: 41 mm.

H. rail 2: 21 mm.

L. rail 2: 218 mm.

W. rail 2: 44 mm.

TABLETOP

Thickness 30 mm.

Diam. 457 mm. (u.) and 507 mm. (t.)

- 4. See appendix 1: 3-4-1940.

5. Tran Tam Tinh 1988, 104; Mols 1991-1992, 35 and 37 fig. 7.

20

1. WOODEN TABLE-LEG, figs. 119 and 122 A.
2. Find spot unknown.
- 3.1. Store-room in the south-east corner of *Insula* VI.
- 3.2. A single leg, all that remains of a three-legged round table. It has an animal leg form but the claw is missing, making it hard to establish what kind of animal was represented. Part of the top is also lost. The fragment is slightly damaged at the front, which probably carried a decoration here. Something which looks like a peg sticks out about two thirds of the way up at the back. This may have been part of a joint between the leg and one of the table's stretchers.
- 3.3.1. Wood, of which only the surface is carbonized.
- 3.3.4. A bulge at the back of the leg could have been part of the joint between the leg and a stretcher. A loose peg may here have been glued to the leg and the stretcher respectively. Another possibility is that the stretcher has broken off in front of the leg. In this case the bulge would be part of the stretcher itself, leaving a complete mortise-and-tenon joint intact at the leg.
- 3.4.1. Both ends of the leg are missing. Light damage at the front may indicate the site of a decoration (an animal head?).
- 3.5.1. H. max. 34 cm., W. max. 6 cm., D. max. 9 cm.

21

1. WOODEN TABLE-LEG, figs. 120 and 122 B.
2. Find spot unknown.
- 3.1. Store-room in the south-east corner of *Insula* VI.
- 3.2. Half of one leg, all that remains of a round table on three legs. Judging from the curve on the underside, the lower part of the leg (element 1) was shaped like a lion's leg up to the knee joint. Only the section from the ankle to the knee is preserved.

Above this comes the beginning of a second element. There is no sign of a decoration on the front of the leg. Any third element has completely vanished. The evidence of other tables (cat.nos. 14-19) suggests that a capital or 'block' crowning may have sat here.

Something like a peg sticks out just above the top of element 1 at the back. The protrusion is covered by a layer of dirt with the colour of iron oxide. This could indicate a metal pin, used to connect the leg to a stretcher.
- 3.3.1. Wood, of which only the surface is carbonized.
- 3.3.3. It is possible that a metal pin was once used to attach a stretcher to the back of the fragment. When this spot is cleaned we will be able to establish whether or not the amount of iron oxide now visible on the surface originates from such a pin.

- 3.3.4. Looking at the bulge on the back of the leg we can try to deduce how the joint between the stretcher and the leg was originally made. It looks as if holes may have been made in both the stretcher and the leg, and a loose metal pin glued into them. It is, of course, quite possible that a wooden peg was used, not a metal pin, and that the discolouration has been caused by something else. Another possibility is that the stretcher has broken off in front of the leg. This would make the bulge part of the stretcher itself, leaving a mortise-and-tenon joint intact at the leg.
- 3.4.1. Both ends of the leg are missing. No traces of a decoration are preserved on the front of the leg.
- 3.5.
- | | |
|-------------------|---|
| H. max.: 34 cm. | Position peg/pin at the back (from left): 2.5-3.5 cm. |
| W. max.: 7 cm. | H. peg/pin: 2.5 cm. |
| D. max.: 11.5 cm. | D. peg/pin from leg: 1.5 cm. |

22

1. WOODEN TABLE-LEG, figs. 121 and 122 C.
2. Find spot unknown.
- 3.1. Store-room in the south-east corner of *Insula* VI.
- 3.2. Part of one leg, all that remains of a round table on three legs. The underside of the fragment is shaped like a lion's leg up to the knee joint. The claw has disappeared. The leg is almost straight as far as the ankle joint and curves outwards between the ankle and the knee. Above the knee joint the back of the leg resumes the line of the back of the lower section. Very little has survived above the knee joint. The decoration on the front, directly above the knee, has disappeared. The pronounced bones of the lion's leg are clearly visible above and below the ankle on both sides of the leg.
- The remains of something like a peg stick out about two thirds of the way up at the back. This may once have formed part of the joint between the leg and one of the table's three stretchers. The brownish red colour of iron oxide visible here may indicate that the 'peg' is in fact a metal pin.
- 3.3.1. Wood, of which only the surface is carbonized.
- 3.3.3. See cat.no. 21, code 3.3.3.
- 3.3.4. See cat.no. 21, code 3.3.4.
- 3.4.1. Both ends of the leg are missing. The decoration on the front of the leg, probably an animal head, has also vanished.
- 3.5.1. H. max. 50 cm., W. max. 5.5 cm., D. max. 11 cm.
- 3.5.2.
- | | |
|------------------------|---|
| Composition leg: | D. middle of curve: 8 cm. |
| D. underneath: 5.5 cm. | H. peg/pin: 39.5-41 cm. |
| H. ankle joint: 20 cm. | L. peg/pin projecting from leg: 2 cm. |
| D. ankle joint: 7 cm. | D. leg at 39.5 cm.: 11 cm.; D. top of leg 6 cm. |

SEATING

23

1. WOODEN STOOL, figs. 123-126.

- 2.1. Find spot unknown. Maiuri (1958, 463, cf. 462 fig. 416) gives it as *Insula Orientalis* II 10, room a. A note kept with the stool states: 'Cardo superiore, casa no. 30'. This may refer to the Casa dell'Atrio Corinzio on the other side of the street. For the problems surrounding the origins of this piece, please see cat.no. 13, code 2.3.

3.1. Magazzino Archeologico, Herculaneum. Inv. E 3148.

- 3.2. Wooden stool on four legs. The legs are connected by two sets of four rungs, one just below the seat, the other just above the floor. No trace of the joints between legs and rungs remains, since all the original joints were cut during the fitting of the first supporting frame. The original length of the rungs cannot be established because they only survive in fragments. The cross-section measurements of the rungs (c 18 x 40 mm.) and the legs (c 40 x 40 mm.) correspond to those of the slats used in the cradle (cat.no. 11). This may indicate the use of standard sizes.

A virtually square seat with a receding moulded around the edge, is supported underneath by a modern plexiglass plate (see below, code 3.4.2.). The top of the seat is decorated with a star-shaped pattern laid in separate pieces of veneer forming a wood mosaic. The star is surrounded on all four sides by two straight strips, also in veneer, which are mitred in the corners. This decorated panel, which is roughly square, is positioned roughly two centimetres from the edge of the seat all round.

The star-shape, which at first sight looks rather complicated, could have been simply constructed based on a square. The square is divided into eight identical triangles via two diagonals and two straight lines (horizontal and vertical) running through the central point (fig. 126 F). For the figure itself two circles are used to plot points on these lines. The centre of both circles is the middle point of the square and their respective radii are set at $\frac{1}{4}$ of the diagonals and $\frac{1}{4}$ of the straight lines. Eight lines are then drawn from the points where the inner circle cuts the straight lines to the corners of the square. This gives a star with four points (see fig. 126 G). New lines are then drawn from the points where the outer circle cuts the eight lines which form this star: some run outwards to the closest intersections between the straight lines and the edge of the original square, others run inwards to the points where the inner circle cuts the diagonals (see fig. 126 H). The figure is now laid out (fig. 126 I) and can be filled in with pieces of veneer.

- 3.3.1. Wood. The stool and the mosaic are made from different woods. Both are carbonized, but the mosaic appears to be less carbonized than the rest. A sample taken from one of the legs proved to be *Abies alba*.
- 3.3.4. We can only guess at the wood joints, because they are cut by the modern frame (see below, code 3.4.2.). It is probable that all of them (i.e. those between the legs and the rungs and those between the legs and the seat) were mortise-and-tenon joints.
- 3.4.1. The stool is reconstructed from a large number of fragments. Many pieces are missing, both from the legs and from the rungs. The wood mosaic decoration is similarly incomplete.
- 3.4.2. The stool was reconstructed after discovery, the various elements being mounted on a metal frame. During this process the whole piece was treated with a mixture of paraffin-wax and carbon powder. In 1986 the old frame was replaced by a new one made of plexiglass to which

the remains were attached using UHU + two-component epoxy adhesive. The paraffin-wax layer is now much thinner. It is not clear whether the rungs were replaced precisely in their original position during the reconstruction.

3.5.1. H. 444 mm., L. 460 mm., W. 455 mm.

3.5.2.

LEGS

H. legs: 422 mm.

Thickness legs: 46 mm.

W. legs: 45 mm.

Overall dimensions: L. 441 mm.; W. 434 mm.

RUNGS

Thickness: 18 mm.

Position (from bottom to top):

58-98 mm.;

349-389 mm.

SEAT

H. 22 mm.

L. 459 mm. (u.) and 417 mm. (t.)

W. 454 mm. (u.) 412 mm. (t.)

L. decoration: 388 mm.

W. decoration: 383 mm.

D. veneer: 2-3 mm.

Measurements from the edge to the star:

moulding: 0-21 mm.;

border: 21-51 mm.;

border: 51-71 mm.

5. Maiuri 1958, 463 and fig. 420; Kusch 1960, 20 and Abb. 31; Maiuri 1964, 57; Packer 1975, 141; Deiss 1985, 126 and fig. on p. 129; Budetta 1987, tav. 90; Budetta/Pagano 1988, 22-23, cat.nr. 2 and fig. on p. 97; Mastroberto 1992, 147; Mols 1993, 491 and 496 tav. CXI, 1.

24

1. WOODEN BENCH, figs. 127-128.

2.1.1. V 31, Casa del Sacello di Legno.

2.1.2. First floor, room at rear of house.

2.1.3. Living room, office/study and bedroom.

2.2. 13-4-1934.

2.3. A bed and three chests were found in the same room. Two of them were filled with wax tablets and one with bronze and terracotta vessels.

3.1. Room 2, ground floor.

3.2. Wooden bench on two supports which are flat along the bottom and vertical at the back. The back of the supports is flush with the back of the seat. At the front the supports have an S-shaped curve above a short, vertical foot. The S-shape is based on the form of an animal leg, stylized into a simple curve.

The two supports carry a seat which probably consists of three boards joined edgewise. A shallow rim runs along the front of the seat. The joints between the supports and the seat are cut by the modern frame (see below, code 3.3.4). The seat projects slightly beyond the supports at the front.

3.3.1. Wood, carbonized.

3.3.4. It is not possible to see how the supports were attached to the seat. Judging by another bench (cat.no. 25) which bears a strong resemblance to this piece, long tongue-and-groove joints with a full or half dove-tail section may well have been used (cf. fig. 22 E).

- 3.4.1. Only small fragments of the bench are missing. The front of the right support has lost its bottom corner. The seat has crumbled along the edges.
- 3.4.2. After discovery a metal frame was made to support the bench. It runs up inside the supports and under the seat. Currently both supports are attached to the frame with wire. The wood has been treated with a mixture of paraffin-wax and carbon-powder. In the reconstruction the two supports were placed c 30 cm. in from the ends of the seat. This was probably not their original position, because the bench thereby becomes very unstable. It is more likely that they were fixed close to the ends to prevent the seat tipping up when somebody sat too close to the edge.
- 3.5.1. H. 368 mm. (incl. reconstruction batten 5 mm. thick), L. max. 1400 mm., W. max. 268 mm.
- 3.5.2.

<p>SUPPORTS H. 315 mm. L. max.: 255 mm. L. min.: 210 mm. (at height 90 mm.) Thickness: 35-40 mm. Front vertical from 0-22 mm.</p> <p>SEAT H. 48 mm.</p>	<p>L. 1395 mm. (f.). L. 1400 mm. (b.). W. 263 mm. (l.). W. 268 mm. (r.). Thickness rim 4 mm. H. rim 2 mm. Position of supports under seat (from left to right): 315-350 mm. and 1050-1090 mm.</p>
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4. See appendix 1: 13-4-1934 and *Descrizione di ambienti* from the Casa del Sacello di Legno.
5. Mols 1993, 491 and 495 tav. CX, 1.

25

1. WOODEN BENCH, figs. 129-132.
2. Find spot unknown.
- 3.1. Magazzino Archeologico, Herculaneum (until 1987 the piece had been stored for a long time in a storeroom in the Area Sacra, *sacellum* A; before this it had been kept in a store on the site of the present Magazzino Archeologico).
- 3.2. The bench is composed of two supports carrying a seat. The back and underside of the supports are at right angles to each other and flat, whereas the front is modelled into an S-shaped curve representing a stylised animal leg from the claw to the knee joint. At the bottom the edge slants sharply inwards. It then returns in a flowing forward curve which runs over to take the edge back towards the seat. The top edge of each support carries a tongue which forms part of the joint with the seat. This is best preserved in the right-hand support. Here we see the outer edge of the tongue broadening towards the top, creating a half dove-tail. On the inner edge it is stepped along the entire length. The tongue of the left-hand support once mirrored the same form, but only small fragments of it remain.

A pair of vertical grooves run down the inside of both supports and appear to be part of joints which held something to strengthen the construction (see below, code 3.3.4. and fig. 132 E-F). Without some kind of reinforcement the weight of a seated person would have caused the bench to sag. There is no further indication of the form of reinforcement used. A third groove on the inside of the left-hand support is irregular and has no counterpart on the right. It should probably be regarded as damage.

A decorative volute which spirals clockwise inwards is carved in relief on the outside face of the right-hand support (figs. 131, 132 D). There is no sign of an equivalent on the left-hand

support. It is possible that a flat piece of wood was inserted here during the first reconstruction.

The seat lay across the two supports. It is now crumbled along the edges. The front edge is slightly rounded and the seating surface is hollowed along the full length to provide more comfort. The seat is framed by a simple line decoration. At the back and sides this consists of a single line carved into the wood. At the front there are two lines. The three lines along the seat run the full length of the surface, while those across it run between them.

On the underside of the seat one can see where the right support was fitted. A groove runs almost the full width of the surface, ending just before the front edge. This indicates that the tongue on the support was slid into the groove from the back. The corresponding groove is not visible on the left.

3.3.1. Wood, carbonized.

3.3.4. When the right-hand support was cleaned in 1987/8 the nature of its joint to the seat was revealed. A tongue ran most of the way along the top of the support. The outer edge was undercut to give a half dove-tail (fig. 132 G) while the inner edge was stepped. The corresponding groove appears in the seat. The tongued support was then slid into the grooved seat from the back and the resulting joint would have been very strong.

To strengthen the construction, some kind of connection ran between the two supports at a lower level. Evidence for this is provided by the two vertical grooves which are cut on the inside of each support (fig. 132 E-F). Two alternative explanations suggest themselves here:

1. the supports were joined by rails or closed panels;
2. tongued uprights were fitted to each groove and attached to the seat at the top. The plexiglass frame prevents us from looking for evidence of this on the seat.

Closed panels would have been the most effective solution, but apart from the grooves no traces of the construction remain.

3.4.1. The main form is preserved, but many fragments are missing:

- part of the bottom edge of the left-hand support;
- part of the decorative volute chiselled or carved on the right-hand support;
- parts of the tongue on the left-hand support;
- parts of the edge of the seat, including the front right-hand corner and the middle of the right-hand side.

3.4.2. A metal frame was constructed after the discovery to hold the fragments in place. It ran below and inside the supports, as well as under the seat. The wood was treated with a thick layer of paraffin-wax mixed with carbon-powder. This layer obscured all details from view. Because the bench had stood in a very damp room for a long time, the old frame had to be replaced at the end of the 1980s. The seat had worked loose from the frame and had broken in two. At the start of 1988 the whole piece was cleaned as part of a new restoration. The layer of paraffin-wax was largely removed and various details became more visible. The old metal frame was replaced by a new plexiglass version, to which the wood was glued using UHU + two-component epoxy adhesive.

3.5.1. H. max. 390 mm., H. reconstructed 414 mm. (= incl. tongues and plexiglass), L. c 105 cm., W. 332 mm.

3.5.2.

SUPPORTS

H. 355 mm. (l.) and 349 mm. (r.)
H. incl. tongue: 370 mm. (l.) and 362 mm. (r.)
L. max. pres.: 301 mm. (l.) and 318 mm. (r.)
L. 240 mm.
Thickness: 43 mm. (l.) and 44 mm. (r.)
Distance between supports in old reconstruction:
698 mm.

Distance between supports in new reconstruction: 790 mm.

Position volute:

(from bottom to top) 130-270 mm.

(from back to front) 162-278 mm.

Height of centre: 235 mm.

Right-hand support:
 L. 313 mm. (u.)
 L. at H. 25 mm.: 240 mm.
 L. at H. 235 mm.: 301 mm. (l.), 318 mm. (r.)
 L. top, between 350-360 mm.
 L. below tongue: 250 mm.

Left-hand support:
 L. max. pres. bottom: 261 mm. (in fragments).
 tongue-and-groove joint:
 Thickness. max.: 15 mm.
 L. 208 mm.
 W. (t.): 13 mm.
 Position vertical grooves inside right-hand support
 (from back to front): 20-34 mm. and 205-227 mm.

Position vertical grooves inside left-hand support (from back to front): 23-32 mm. and 216-234 mm.

SEAT
 D. 35 mm.
 L. 1050 mm.
 W. 332 mm.
 Position groove under seat (from right to left): 125-153 mm.

LINES ON SEAT
 D. 2-3 mm.
 Position from left to right: 37-40 mm. and 1007-1010 mm.;
 from front to back: 14-16, 40-42 and 306-308 mm.

Current position of supports in relation to seat
 (from left to right): 118-161 mm. (l.)
 and 951-995 mm. (r.)

26

1. WOODEN BENCH, figs. 133-136.

2.1. A note kept with the bench gives the find spot as the *Decumanus Maximus*. The exact find spot is unknown.

2.2. 1960-1961; exact date unknown.

3.1. Magazzino Archeologico, Herculaneum. Inv. E 3153.

3.2. The bench consists of a seat on four legs. The two rear legs are simply rectangular, while the two front legs have sharply carved profiles. At each end the bottoms of the legs are fitted into stretchers which originally linked them front and back. The joints between the legs and the stretchers are completely closed, making them impossible to study. Part of the left-hand stretcher is missing in the middle and of the right-hand stretcher only a fragment remains (from the front of the piece to the back of the front-leg). The remnants of the stretchers are rounded along the edges and all the original measurements can be deduced from the left-hand stretcher. Mortise-and-tenon joints were used to attach the legs to the seat (see below, code 3.3.4.). The rectangular rear legs fit precisely to the rear edge of the seat. The front legs are vertical at the back and modelled in a fantasy form at the front. This form strongly suggests a stylised animal-leg from claw to knee, but with a scroll interrupting the curve between ankle and knee. The front legs are set back slightly from the front of the seat.

The seat has been reconstructed from a large number of fragments. Due to the poor state of preservation one cannot see whether it was originally made in one piece or from several planks glued together. The front edge is slightly rounded, after which a raised moulding runs almost the full width of the seat. This is repeated along the rear edge, creating a comfortable hollow for sitting. About one third of the way along the rear edge from the left a rectangular notch is cut right through the thickness of the seat. Its purpose is not known.

3.3.1. Wood, carbonized. One sample was taken which could not be identified.

3.3.4. The rear legs were attached to the seat using mortise-and-tenon joints. The tenons are extensions of the end of the legs and are visible at the rear of the seat. The joints between the front-legs and the seat were probably dove-tail joints, but this is difficult to see. The joints between the legs and the stretcher cannot be examined but here too we should expect mortise-and-tenon joints.

- 3.4.1. The missing pieces are:
- parts of the two stretchers beneath the legs;
 - a small part at the top of the left-hand rear leg;
 - part of the seat above the left-hand rear leg;
 - pieces from all the corners of the seat except the left-hand rear corner.
- 3.4.2. After the discovery a frame of metal strips was constructed to hold the bench together. This was fitted under the stretchers, against the back of the front legs and to the front of the rear legs. At the top it was screwed to a modern wooden panel which supported the seat. All the antique wood was treated with a mixture of paraffin-wax and carbon-powder.
- Early in 1987 the old frame was replaced by a new one, this time of plexiglass, to which the bench was attached using UHU+ two-component epoxy adhesive. It follows the form of the old frame. The thick layer of paraffin-wax was replaced by a thinner layer, which has made the structure of the antique wood visible once more. Parts which were previously hidden can now be studied through the plexiglass.
- 3.5.1. H. max. 385 mm., L. 1046 mm., W. max. 415 mm.
- 3.5.2.
- | | |
|---|--|
| <p>STRETCHERS</p> <p>H. 16 mm.</p> <p>L. 415 mm.</p> <p>W. 61 mm.</p> <p>LEGS</p> <p>Position from front of stretcher:</p> <p>35-136 mm. (f.)</p> <p>320-360 mm. (b.).</p> <p>H. 334 mm., joints not included.</p> <p>Thickness front leg max. 101 mm.</p> <p>Thickness front leg min. 35 mm.</p> <p>W. front leg 40 mm.</p> <p>D. rear leg 40 mm.</p> <p>W. rear leg 35 mm. (l.)</p> <p>and 40 mm. (r.).</p> | <p>SEAT</p> <p>H. max. 31 mm.</p> <p>L. 1046 mm.</p> <p>W. 330 mm. (t.).</p> <p>Moulding:</p> <p>H. 2 mm.</p> <p>Position (from front to back):</p> <p>front: 25-77 mm. (l.) and 25-78 mm. (r.);</p> <p>rear : 267-330 mm.</p> <p>Position (from left to right): 23-1020 mm.</p> <p>Position legs in relation to seat:</p> <p>left: 140-180 mm. (f.) and 145-180 (b.);</p> <p>right: 890-930 mm. (f. and b.).</p> <p>Position notch in rear edge of seat:</p> <p>from left to right: 203-235 mm.;</p> <p>from back to front: 20-33 mm.</p> |
|---|--|
5. Budetta/Pagano 1988, 32-33, cat.nr. 7; Mastroberto 1992, 147.

STORAGE FURNITURE

27

1. WOODEN *AEDICULA*, fig. 137.
- 2.1.1. III 13, Casa a Graticcio.
- 2.1.2. First floor, room 5 (Maiuri 1958, 416 fig. 354); west wall. According to Maiuri (1958, 419) the *aedicula* was found under one of the beds (cat.no. 2 or 3).
- 2.1.3. Bedroom, possibly also used as a living room.
- 2.2. November 1928.
- 2.3. See cat.no. 2, code 2.3.
- 3.1. The *aedicula* is set up on a modern shelf on the south wall of the room in which it was found. The shelf hangs 1.5 metres from the floor.
- 3.2. Fragment of a wooden *aedicula*, with an entablature and gable roof form derived from temple architecture. The fragment consists of a facade (which effectively represents a complete entablature and pediment) and two sides (which are slightly more than half the height of the pediment). The various elements of the entablature and pediment are mitred at the corners to ensure an unbroken line between the facade and the sides.

The entablature consists of three elements. At the bottom there is a flat strip which can be regarded as the frieze. On top of this comes a double moulding, followed by another flat strip which slants outwards and upwards at the sides. On the left half of this strip a toothed frieze is suggested by scored vertical lines. On the right there are no signs of this decoration, which leads one to suspect that this section is a modern addition (see below, code 3.4.2.).

On top of the entablature sits a markedly projecting moulding, the *geison*, which carries the gable roof. The underside of the *geison* is notched along its entire length. The 'top' of the notch is moulded. All the elements of the entablature are continued along the sides of the *aedicula*, as is the *geison*. Each individual element is made from a single piece of wood. They were probably glued together.

Above this construction begins the gable roof, which at the front (pediment) is built up from a number of mouldings slanting upwards from the sides towards the ridge, where they are mitred together for a close fit. These mouldings form, as it were, the slanting legs of isosceles triangles. Below them, deeply recessed behind the topmost element of the entablature, is a flat, undecorated triangle (the *tympanum*). Immediately above it come two slanting, flat strips, which meet in the middle. In the left-hand strip 29 parallel lines are scored at right angles to the slant. These suggest a 'toothed frieze' sitting slightly proud of the *tympanum*. The next moulding again projects markedly and like the *geison* is notched and moulded on the underside. Then comes a triple moulding which projects forward at the top. The top edge has been given a coat of stucco, which continues along the top of the sides. The inside of the *aedicula*, which is vertical on its three sides, is also skimmed with stucco. The roof is everywhere about 10 cm. thick and left open inside. The stucco on top of the *aedicula* is painted red. Inside it is left white.
- 3.3.1. Wood, carbonized.
- 3.3.3. The stucco on the inside was applied during the construction of the piece. It is partly a reddish brown and partly white.

- 3.3.4. The various elements of the entablature and pediment are made from single pieces of wood. They appear to be glued together. They are mitred together in the corners.
- 3.4.1. Only the upper part of the *aedicula* is preserved; nothing has survived below the entablature. The entablature itself is missing an architrave and a moulding between the architrave and the frieze. The evidence of cat.nos. 28 and 30 suggests that two columns probably stood below this fragment, perhaps with an arrangement of doors which could close off a small *cella*. The missing architrave probably rested on the columns. Both sides are cracked across their full width.
- 3.4.2. It does not look as if any modern reinforcement has been added to the roof. The layer of stucco on the inside probably gave adequate support and the further treatment of the wood with paraffin-wax and carbon powder was deemed sufficient. A glass case has been placed over the piece for protection. A large section of the right-hand half of the facade is probably a modern addition. This part is quite different from the left-hand half and is much less detailed. The thick layer of paraffin-wax prevents closer examination.
- 3.5.1. H. max. pres. 280 mm., L. max. 730 mm., D. max. 630 mm.
- 3.5.2.
- | | |
|---|--|
| <p>ENTABLATURE
Composition (at front centre from below):</p> <ol style="list-style-type: none"> 1. frieze: 0-60 mm.; 2. double moulding: 60-68 mm. and 68-75 mm.; 3. toothed frieze: 75-90 mm.; <p>Facade (numbered as above):</p> <ol style="list-style-type: none"> 1. L. 560 mm.; 2. L. 570 (u.) and 580 mm. (t.); 3. L. 590 mm. <p>Projecting elements (in relation to lowest element):</p> <ol style="list-style-type: none"> 2. projects 5-10 mm. beyond 1 on all sides; 3. projects 15 mm. beyond 1 on all sides. <p>Height <i>geison</i> above bottom edge entablature: 90-115 mm.
L. <i>geison</i>: 660 mm. (u.) and 670 mm. (t.).
The <i>geison</i> projects 60 mm beyond element 1 of entablature on all sides.</p> <p>PEDIMENT
Composition
(at front centre from below):</p> <ol style="list-style-type: none"> 1. 115-210 mm.: tympanum; 2. 210-230 mm.: 'toothed frieze'; | <ol style="list-style-type: none"> 3. 230-250 mm.: flat strip notched underneath; 4. 250-270 mm.: triple moulding; 5. 270-280 mm.: stucco. <p>(lengths):</p> <ol style="list-style-type: none"> 1. L. 460 mm. (u.); 2. L. 230 mm. (inner) and 270 mm. (outer); 3. L. 270 mm. (inner) and 335 mm. (outer); 4. L. 335 mm. (inner) and 355 mm. (outer); 5. L. 355 mm. (inner) and 365 mm. (outer). <p>Projecting elements (in relation to lowest element):</p> <ol style="list-style-type: none"> 2. projects 5 mm. beyond 1 on all sides; 3. projects 35 mm. beyond 1 on all sides; 4. projects 60 mm. beyond 1 on all sides. <p>Thickness facade 10 cm.</p> <p>SIDES
H. max. 168 mm.
L. 630 mm. (l.) and 605 mm. (r.).
W. 110 mm. (l.) and 120 mm. (r.);
cracks in sides (from front):
44 cm. (l.) and 25 cm. (r.).</p> <p>STUCCO
red (from outer edges): 0-75 mm. (l.); 0-80 mm. (r.); and 0-70 mm. (front)</p> |
|---|--|
5. Maiuri 1932, 66; Maiuri 1958, 419 and fig. 337; Maiuri 1960 fig. 489; Maiuri 1964, 31; Wasowicz 1966, 78, fig. 23; Packer 1975, 141; Orr 1980, 160; Orr 1980, 194 no. 7; De Vos/De Vos 1982, 270; Clarke 1991, 262 fig. 161; Fröhlich 1991, 30 Anm. 137; De Kind 1992, 151.

1. WOODEN *AEDICULA*, fig. 138.
2. Upper storey belonging to bottega V 17 (Maiuri 1958, 222 pl. 174).
 - 2.1.1. Room behind kitchen. The piece is sketched on this spot in Maiuri 1958 II, tav. XXII.
 - 2.1.3. Bedroom.
- 2.2. Probably November 1937.
- 2.3. No traces of the *aedicula*'s contents were found. The division of the first floor apartment (a living room at the front, with a kitchen behind it) makes one suspect that the dimly lit back room served as a bedroom. The only light came through the two rooms in front via two circular and one rectangular window (cf. Maiuri 1958, 238). A cupboard (cat.no. 37) was found in the kitchen (see Maiuri 1958, 239).
- 3.1. V 17, back room of shop. Maiuri (1958, 238) calls it a 'retrobottega della Casa del bicentenario'.
- 3.2. The design of the *aedicula* is based on the facade of a temple (*templum in antis*). The base was formed by a board which ran under the whole *cella* and the *pronaos* (cf. remains in fig. 138 C). In the front stand two plain columns, crowned by Corinthian capitals of which no details can be distinguished. Each of the capitals carries an *abacus*, which slightly projects beyond the entablature above. A ceiling board covers the entire portal.

The *cella* could be closed at the front by a pair of double doors. All except one (centre-left) of the four leaves (*valvae*) are preserved. They conform to a traditional form which was very popular in Herculaneum: a framing consisting of two stiles linked by three rails, one at the bottom, one at about two thirds height and one at the top. The corners are partially mitred. The middle rail is partly let in to the two stiles. The framing contains two panels, the lower one roughly twice the height of the upper. All the inward facing edges of the framing are moulded. A vertical lath was fitted to the left-hand edge of the centre-right leaf which would have partly overlapped the missing door.

Two remaining hinge segments indicate how the doors were opened (fig. 138, no. 1). One of these is preserved between the two right-hand leaves in the front, suggesting that the inner leaf opened back against the outer leaf. The other is situated on the outside edge of the rightmost leaf. It was part of the hinge upon which the leaf could be opened relative to the side of the *cella*. The two segments are held in vertical grooves which would originally have held hingebands of linked segments. Although the bands themselves no longer exist the ends of several pins, which would once have anchored half the segments in the side wall of the *cella*, can still be seen in the paraffin-wax. No trace of any hinge is visible on the left-hand side but we can assume that the doors here opened in the same way. The fact that there were hinges between the outer leaves and the sides of the *cella* argues against Orr's view (1980, 198) that only the two inner leaves could be opened.

The right-hand side of the *cella* consists of a framing which contains two panels standing next to each other. The two outer stiles of the framing occupy the full height between the base and the entablature and are linked at the top by a rail. The central stile between the two panels meets the rail at the top. There must have been another rail at the bottom but this has not survived. The framing around the panels carries a triple moulding which is mitred into the corners. The side is much less finely finished than the front of the *cella*. The left-hand side has been lost.

On the columns and the *cella* rests an entablature crowned by a gable roof. The entablature is built up from eight elements. Seen from the bottom these are: an architrave, resting on the

columns, whose front face is in the same plane as the column shafts; a triple moulding, slightly projecting; an undecorated frieze, in the same plane as the architrave; a triple moulding, again slightly projecting; two plain members, each of which projects beyond the element below (small coffers are hollowed out in the underside of the upper one); and finally two mouldings, the first triple and the second quadruple, which project beyond the plain members. The entablature, including the final two mouldings, surrounds the front and the sides. All the elements are mitred in the corners to give an unbroken line.

The eighth element, the quadruple moulding, also forms the base of the gable roof. The pediment is composed of five - partially profiled - mouldings which slope upwards from both sides and meet in the centre. The plain tympanum is deeply recessed in relation to the entablature below. The mouldings are again mitred at the join to continue the profile. Seen from the bottom, the elements of the pediment increase in length and thus project further towards the top. At the sides of the roof the topmost element of the pediment fits to the entablature and runs on to the back of the *aedicula*. The other elements do not run through into the sides.

Above the tympanum there are four elements which slope upwards from the sides and project progressively forwards. A triple moulding is followed by two plain members, the upper of which is notched along the underside. Above this is a triple moulding followed by a quadruple moulding (*sima*). Only along the edges at the front and sides is a roof suggested. Behind this the roof is left open at the top.

3.3.1. Wood, carbonized.

3.3.4. The flat boards (base, ceiling) seem to be composed of small boards glued edge to edge. The panels in the doors and the right side are fitted loose in the framing. The various elements of the entablature and gable roof are made from single laths, which have then been glued together. They are mitred into the corners, as is the moulded framing of the doors and the surviving side, giving a continuous line to all the profiled surfaces. The columns are attached to the base board and the entablature with mortise-and-tenon joints.

3.4.1. Parts of the base board of the *aedicula* are missing; the surviving section lies mainly under the doors of the *cella*. The bottom of the columns, the bottom of the right-hand side, the entire left-hand side and the centre-left door leaf have disappeared. Ten square centimetres of the ceiling board above the *pronaos* is missing, as are many small fragments throughout the piece. These include almost all the hinge segments. We do not know whether the *aedicula* was closed at the back, nor if it were placed on a separate lower section like cat.no. 29.

3.4.2. The piece was reconstructed after the discovery. We can assume that it was found in fragments because it contains many cracks and a lot of modern additions. Some of these are immediately recognizable supporting pieces, such as the metal pins which replace the missing bases of the columns and the wooden constructions which support the entablature at the back and on the left-hand side. Others are almost invisibly incorporated into the antique wood. Wooden supporting plates have also been fitted behind the doors and behind and under the side panels.

In addition, a number of areas appear to have been reconstructed using antique wood found elsewhere in Herculaneum. Since the whole piece has been rubbed with a mixture of paraffin-wax and carbon-powder it is difficult to distinguish between the antique wood and the modern additions. The layer of wax also prevents us from examining the joints used. A glass case has been placed over the piece and the whole thing is set up on a modern podium (height 86 cm.).

3.5.1. H. 100 cm., L. 89 cm., D. 67 cm.

N.B.: accurate measurements could not be taken due to the glass case. H. modern base 7 cm.

3.5.2

BASE BOARD

H. base: 2 cm.
L. max. pres.: 54 cm.
W. max. pres.: 30 cm.

COLUMNS

H. columns (reconstructed): 50 cm.
H. max. pres. left-hand column: 35 cm.
H. max. pres. right-hand column: 41 cm.
Diam. columns: c 6 cm.
H. capital: 7 cm.
Covering plate on capital: H. 1 cm., W. 8 cm.
and D. 8 cm.

FRONT CELLA

Distance doors from front of columns: 24 cm.
Thickness doors: 2 cm.
Construction door leaves (from bottom to top):
rail: 0-5 cm.;
panel: 5-28 cm.;
rail: 28-34 cm.;
panel: 34-44 cm.;
rail: 44-49 cm.;

Position door leaves (from left to right):
leaf 1: 0-15 cm.;
lath: 32-34 cm.;
leaf 3: c 33-49 cm.;
space for vertical hinge: 49-51 cm.;
leaf 4: 51-69 cm.

Diam. hinge segments: 2 cm.
H. intact hinge segment: 6 cm.
Position intact hinge segment:
15 cm. above base.
H. fragment hinge segment: 4 cm.

Lath on second door leaf:
H. c 57 cm.
W. 2.5 cm.
Thickness: 1 cm.
Depth recess door panels: 1 cm.

RIGHT-HAND SIDE CELLA

Construction (from front to back):
D. column: 0-60 mm.;
D. door leaf: 242-262 mm.;
space for hinge: 262-280 mm.;
stile: 280-310 mm.;

moulding: 310-318 mm.;
panel: 318-388 mm.;
moulding: 388-396 mm.;
stile: 396-448 mm.;
moulding: 448-460 mm.;
panel: 460-520 mm.;
moulding: 520-528 mm.;
stile: 528-575 mm.

Construction (from bottom to top):
start of remains: c 7 cm.;
top panels: 536 mm.;
moulding: 536-545 mm.;
rail: 545-575 mm.

Depth recess side panels: 1 cm.

ENTABLATURE

Composition (from below):
architrave: 50.5-55.5 cm.;
triple moulding: 55.5-56.5 cm.;
frieze: 56.5-65.5 cm.;
triple moulding: 65.5-68 cm.;
plain member: 68-69.5 cm.;
plain member with notch: 69.5-71.5 cm.;
triple moulding: 71.5-73.5 cm.;
quadruple moulding: 73.5-76 cm.

L. architrave: 70 cm. (f.) and 58.5 cm. (r.)
L. triple moulding: 74 cm. (f.) and 61 cm. (r.)
L. frieze: 70 cm. (f.) and 58.5 cm. (r.)
L. triple moulding: 73 cm. (f.) and 61 cm. (r.)
L. plain member: 74 cm. (f.) and 61.5 cm. (r.)
L. plain member with notch: 82 cm. (f.) and 65.5 cm. (r.)
L. triple moulding: 84 cm. (f.) and 67 cm. (r.)
L. quadruple moulding: 86 cm. (f., underside),
89 cm. (f., top) and 68.5 cm. (r.).

PEDIMENT

Composition (from bottom to top through the centre):
tympanum: 76-85 cm.;
triple moulding: 85-90 cm.;
plain member: 90-92 cm.;
plain member with notch: 92-94 cm.;
triple moulding: 94-97 cm.;
quadruple moulding: 97-100 cm.

L. tympanum: 44 cm.
Depth pediment: 14 cm.

5. Horn 1938, 708; Maiuri 1958, 239 and tav. XXII; Maiuri 1964, 48; Cerulli Irelli 1969, tav. 16; Orr 1978, pl. X; Orr 1980, 129 and 197-198 no. 23; Deiss 1985, 109; Fröhlich 1991, 30 Anm. 137.

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1. WOODEN CUPBOARD-AEDICULA, figs. 139-145.

- 2.1.1. V 31, Casa del Sacello di Legno.

- 2.1.2. Room 2 (Maiuri 1958, 253).
- 2.1.3. Bedroom, which may have also been used for meals (cf. Maiuri 1958, 254).
- 2.2. 2-3, 17-3 and 19-3-1934.
- 2.3. A bronze statuette of Hercules and a marble statuette of a goddess, possibly Venus, were amongst the objects found in the *aedicula* (see Maiuri 1958, 254; Mols 1993A, 13-17). The remains of a wooden table (2-3-1934) and a bed (*Descrizione di ambienti*) were also found in the room but these have not been preserved. The partial lowering of the ceiling (alcove) indicates the position of a bed (see Elia 1932, *passim*). The room has a window with iron lattice facing the street (= east) and a door in the west wall. The walls have a simple panel decoration (cf. Van Binnebeke 1993, 231). Ordinary household articles were found in both parts of the piece, most of them in the bottom section, which also contained a terracotta statuette of a lion, bone dice, jewellery and bronze coins. Cf. for the glassware found in this piece: Scatozza Hörich 1986, cat. 69, 104, 134, 181, 230, 231, 245, 251 inv. E 1249, 1238, 1252, 1248, 1237, 1247, 1255, 1235. This author is mistaken in stating that the piece was found on the first floor; for the jewelry: Scatozza Hörich 1989, 55, cat. 68: ring (inv. E 1264) and signet ring (inv. E 1240).
- 3.1. At present the *aedicula* stands under the alcove, in the north-east corner of the room. Inv. E 1287 (a photograph of this *aedicula* appears on a card filed in the Magazzino Archeologico. The negative number of the photograph is 29200).
- 3.2. The piece is in two parts, a cupboard-like lower section and an upper section in the form of a temple without a gable roof. Maiuri (1958, 254) suggested that this might indicate a double function for the piece and this view is confirmed by the contents.

The lower section (cupboard)

Only part of the lower section has survived, making the original height hard to establish. The body of the preserved piece only begins at 31 cm. above floor level and only two fragments remain below this height. One of these is part of a moulding from the original base, the left end of which is mitred to meet its equivalent on the left-hand side.

In the reconstruction, a board was placed above this moulding to serve as a bottom for the cupboard. No traces of the original bottom are preserved. The modern board projects 1 cm. beyond the base moulding. Above the board, front left, was placed a bone hinge segment which still contains its original wooden core. It is not clear whether this segment originally belonged here, although it was undoubtedly part of one of the four vertical hinge bands in the lower section, one of which occupied this position. The segment is decorated at the top with two scored lines and is slightly damaged along the top edge (16 small wooden segments, capped by 2 larger ones, have been fitted beside the reconstructed doors: H. 37 and 92 mm. respectively).

The front of the lower section was originally closed off by a pair of double doors. Of these the two left-hand leaves are partially preserved, while the two right-hand leaves are modern. Their form corresponds to the most common door type found in Herculaneum. They each consist of a framing containing two panels one above the other. The panels are roughly the same width, with the lower panel higher than the upper. Since the bottoms of the two surviving leaves are missing, the original height of the lower panels can not be measured. The framing is moulded along the panels, where it is mitred into the corners.

The preserved doors show that the inner leaf hinged back on the outer leaf. This in turn hinged outward, thus opening the entire front of the cupboard. The hinges consisted of bands of linked segments for which space was left between the two leaves and along the outside edge of the outer door. We can assume that the arrangement was the same on both sides. The bone segment mentioned above would have belonged to one of these bands. A further segment, also decorated with two horizontal lines, has been placed between the partially preserved left-hand

leaves (see below, code 3.4.2.).

The lower section is currently crowned by a reconstructed frieze which carries a decoration in wood mosaic (see below, code 3.4.2.). The sides and the back are also fully reconstructed. The sides consist of five stiles, fitting into rails at the top and bottom. The resulting framing holds four panels. The bottom rail rests on the base moulding. The back of the lower section is quite flat, and unlike the sides, does not reproduce the original structure. This would probably also have consisted of stiles, rails and panels. A central shelf has been placed inside the reconstructed cupboard.

The upper section (aedicula)

The upper section has the form of a temple *in antis*, but without the pediment and gable roof. The base is composed of two horizontal elements, one above the other. The first is a complicated moulding, the components of which are stepped outwards towards the centre. It is constructed from several laths glued together. Above this comes a frieze decorated mainly in wood mosaic (fig. 141). From the back it is apparent that the base is hollow and has been strengthened with modern wood. From here it is also clear that the base consists of four laths. The third of these is a frieze decorated in the front and on both sides with scratched slanting parallel lines. These are probably a template for further veneer.

On this base sits a board which constitutes the floor of the little temple. This board again consists of two elements, placed one on top of the other: the lower of them projects somewhat beyond the base and carries a triple moulding, while the upper one runs beneath the doors of the *cella* and under the *pronaos*. It is slightly set back in the front, where in each corner a fluted column (23 flutes) stands. These have a double base (two *tori*) and are crowned by wooden Corinthian capitals.

Behind the columns the front of the *cella* is dominated by a pair of double doors. The door leaves again consist of a framing containing two panels, one above the other (fig. 145 I-O). The construction is similar to the doors in the lower section.

A vertical lath fitted to the left-hand edge of the centre-right leaf masks the gap between the doors when closed. Three scored lines run the full height of the front of this lath. A bronze pin is mounted on the centre-left leaf, perhaps part of a lock.

'Piano' hinges enabled the two central leaves to turn back on the two outer leaves, which in turn could open outwards from the sides of the *cella*. Thus the front of the *cella* could be fully opened. A lath, fixed to the floor across the door opening, prevented the doors from opening inwards.

The four hinges each have 15 segments which, unlike those in the lower section, are made of wood. On the top and the bottom there is a larger segment, held in position by pins through two holes. In between lie 13 smaller segments. There is a round hole in the cylinder of every other small segment (from below, nos. 1, 3, 5, 7, 9, 11 and 13), in which the heads of the pins which anchored half the hinge are still visible (see § 4.7.2). The larger segments again have two scored horizontal lines: in the lower half of the bottom segment and in the upper half of the top segment.

The sides of the *cella* are divided into two panels by three stiles. The back is flat, a continuation of the back of the lower section. It is difficult to study because a thick layer of paraffin-wax obscures all details. It is unlikely that this back is original, since one would expect some kind of panelling here.

The *aedicula* section is crowned by an architrave resting on the top of the columns and the *cella*. This has two components, both of which run along the front and the sides. The lower one is a frieze decorated in wood mosaic - a Saint Andrew's cross is repeated eighteen times at the sides and twenty-one times at the front. The crosses are separated by vertical strips. At the top they are bordered by a double and at the bottom by a single horizontal strip, which run the full length of the decoration. Above the frieze sits a triple moulding. From the back of the *aedicula* we can see that the frieze and moulding are very shallow and are mounted right on the edge of the front and sides. The area behind them is filled by a board which provides a ceiling for the temple. Its top is at the same level as the bottom of the moulding. The finish of the upper

section indicates that there was no pediment placed on top of it.

- 3.3.1. - 3.3.3. Wood, carbonized. The type of wood used for the wood mosaic is not the same as that used for the main structure. The surviving hinge segments in the lower section are made of bone.
- 3.3.4. The wood joints are frequently obscured by the thick layer of paraffin-wax which was applied to preserve the wood. For the fitting and operation of the hinges see § 4.7.2.
- 3.4. The piece has for a long time been under serious threat from a crumbling ceiling and a leak which is responsible for the lower section standing in a pool of water.
- 3.4.1. While the upper section of the piece is preserved virtually intact, a large part of the lower section is missing. Of this only a small fragment in the left-hand bottom corner and parts of two of the original four doors have survived. Maiuri (1958, 254) tells us that the lower section originally contained a shelf, but no trace of it now remains.
- 3.4.2. After the discovery the scantily preserved lower section was partially reconstructed. The original height probably had to be estimated. The moulding on the base, of which a small part had survived, was 'completed' and the two missing doors on the right were reconstructed in accordance with the two which were still partly preserved. The frieze crowning the lower section is also modern. It has been given a modern decoration in wood mosaic at the front. This decoration might be a pure addition, reflecting the one which appears along the top edge of the upper section, but it may also have been a reconstruction based on details which are no longer preserved. In the upper section the decoration is indeed original. There are also modern supporting pieces added in various places. The sides and back of the lower section are completely reconstructed. The reconstructed back is a single piece, rather than panelled, and certainly does not reflect the original situation. The two sides, however, do have a framing and panel construction, which may well represent what the excavators found but could not preserve. Finally, a modern shelf has been placed in the middle of the cupboard.

The remains of the piece are treated with paraffin-wax mixed with carbon powder for the purpose of preservation.

The preserved hinge segment between the left-hand door leaves in the lower section has probably been incorrectly positioned during the reconstruction. It must have formed the top or bottom of one of the hinge bands, as is explained in § 4.7.2.

- 3.5.1. H. (reconstructed) 1642 mm., L. max. 723 mm., W. max. 551 mm.

3.5.2.

LOWER SECTION FRONT

H.: 942 mm. (reconstructed).
L.: 652 mm. (reconstructed).
H. base moulding: 74 mm.
L. max. base moulding: 141 mm.
H. max. hinge segment bottom left: 92 mm.
Diam. hinge segment bottom left: 21 mm.
Bottom edge preserved door leaves at: 310 mm.
Top edge preserved door leaves at H.: 897 mm.
Thickness preserved door leaves: 16 mm.
W. panels incl. mouldings in preserved door leaves: 77 mm. (l.) and 84 mm. (r.).
H. top panels incl. mouldings: 233 mm. (l.) and 235 mm. (r.).
Thickness moulding around panels: 15-20 mm.
W. hinge bands: 21 mm.
D. notch for hinges: 7 mm.

Position remaining hinge segment (from below):

760-800 mm.

Position shelf (from below): 520-530 mm..

LOWER SECTION RIGHT-HAND SIDE
(reconstructed)

Construction (from bottom to top)

base moulding: 0-70 mm.;
rail: 70-110 mm.;
stiles and panels: 110-892 mm.;
rail with wood mosaic: 892-935 mm.;
(from back to front):
stile: 0-42 mm.;
panel: 42-116 mm.;
stile: 116-160 mm.;
panel: 160-234 mm.;
stile: 234-276 mm.;

panel: 276-350 mm.;
stile: 350-392 mm.;
panel: 392-466 mm.;
stile: 466-509 mm.;
space for hinge: 509-532 mm.
D. base: 580 mm. (u.) and 533 mm. (t.).
D. bottom rail: 533 mm.
D. top rail with mosaic: 532 mm.

UPPER SECTION

BASE/BASE BOARD

H. base: 162 mm.
Construction (from bottom to top):
complicated moulding (element 1): 0-95 mm.;
frieze with mosaic (element 2): 95-162 mm.;
base board: triple moulding (element 1): 162-184 mm.
Max. L. complicated moulding: 723 mm. (f.) and 551 mm. (sides).
Max. thickness complicated moulding: 125 mm. (this can be gathered from the back of the *aedicula*).
laths comprising complicated moulding: (from bottom to top):
lath 1: 0-19 mm.;
lath 2: 19-47 mm.;
lath 3: 47-69 mm.;
lath 4: 69-95 mm.
L. frieze with mosaic: 635 mm.
D. frieze with mosaic: 522 mm.
Thickness framing of back: 8 cm. (l.) and 12.5 cm. (r.).
L. base board: 666 mm. (element 1) and 626 mm. (element 2)
D. 545 mm. (element 1) and 264 mm. (elem. 2)
H. base board (element 2): 9 mm.

COLUMNS

H. columns (incl. base and capital): 482 mm.
Construction columns (from bottom to top):
element 1 base: 0-15 mm.;
element 2 base: 15-27 mm.;
base plate column: 27-30 mm.;
shaft: 30-410 mm.;
base plate capital: 410-415 mm.;
capital 415-482 mm.;
Diam. element 1 base: 85 mm. (u.); 89 mm. (c); 71 mm. (t.)
Diam. element 2 base: 71 mm. (u.); 76 mm. (c); 70 mm. (t.)
Diam. base plate column: 59 mm.
Diam. shaft: 57 mm.

Location columns:

From front top element of base board: 9 mm.;
From sides top element of base board: 4 mm.;

FRONT CELLA

H. door leaves: 478 mm.
W. door leaves: (from left to right)
resp.: 145, 139, 116 and 127 mm.
Thickness door leaves max.: 23 mm.
W. lath: 27 mm. (overlaps centre-left door leaf by 12 mm.).
Thickness lath: 7 mm.

Diam. hinges: 22 mm.
H. large hinge segments: 102 mm.
H. small hinge segments: c 2 cm.
Diam. hole in hinge segments: 6 mm.
H. lath behind doors: 1 cm.
Thickness lath behind doors: 5 mm.

Construction left-hand door leaf

(from top to bottom):

rail 1 (flat surface): 0-32 mm.;
rail 1 (double moulding): 32-36, 36-40 mm.;
panel: 40-168 mm. (with lines scored at 45-52 mm. and 151-160 mm.);
rail 2 (double moulding): 168-173, 173-178 mm.;
rail 2 (flat surface): 178-204 mm.;
rail 2 (double moulding): 204-209 mm., 209-214 mm.;
panel: 214-450 mm. (with lines scored at 219-228 mm. and 234-245 mm.);
rail 3 (double moulding): 450-455 mm., 455-460 mm.;
rail 3 (flat surface): 460-478 mm.;
(from left to right):
space for hinge: 0-20 mm.;
stile 1 (flat surface): 20-44 mm.;
stile 1 (double moulding): 44-50 mm., 50-55 mm.;
panel: 50-116 mm. (with lines scored at 58-65 mm. and 105-113 mm.);
stile 2 (double moulding): 116-118 mm., 118-124 mm.;
stile 2 (flat surface): 124-145 mm.;
space for hinges and gap to second door leaf: 145-174 mm.
Thickness mouldings: c 1 cm.
Position pin above second elem. base board: 200-215 mm.

SIDE CELLA

H. max. preserved sides: 735 mm.
Construction (from back to front):
stile: 0-42 mm. (l.) and 0-48 mm. (r.);
panel: 42-106 mm. (l.) and 48-102 mm. (r.);
stile: 106-147 mm. (l.) and 102-149 mm. (r.);
panel: 147-210 mm. (l.) and 149-204 mm. (r.);
stile: 210-252 mm. (l.) and 204-243 mm. (r.);
space for hinge: 252-275 mm. (l.) and 243-267 mm. (r.);
edge door minus notch for hinges: 275-282 mm. (l.) and 267-272 mm. (r.);
column shaft: c 440-490 mm. (l.) and 430-480 mm. (r.);
There is an 8 mm. difference between the front edges of the respective sides.
Construction (from bottom top):
base of upper section: 0-162 mm.;
base board element 1: 162-184 mm.;
stiles and panels: 184-678 mm.;
frieze with wood mosaic: 678-710 mm.;
top moulding: 710-732 mm.
Thickness ceiling board: 5 mm.

BACK

H. 730 mm. at outer edges and 690 mm. in the middle.
Construction top edge (from left to right):
uprights (stepped edge): 0-50 mm. (t.) and 0-65 (u.);
surface inside upright: 65-550 mm. (u.) and 50-565 mm. (t.).
W. max. 608 mm.

TOP

H. architrave: 32 mm.
H. triple moulding: 22 mm.

4. See appendix 1: 2, 13, 17 and 19-3-1934 and Descrizione di ambienti.
5. Horn 1936, 497; Budde 1940, 12-13; Maiuri 1945, 156-157; Maiuri 1958, 254 and fig. 202 and 472, nota 53; Kusch 1960, 21 and Abb. 36-37; Maiuri 1964, 50, 103 and tav. XXIII fig. 42; Righini 1965, 409; Richter 1966, 115; Wasowicz 1966, 188 and 190 fig. 95; Orr 1978, 1585; Zefiro 1979, 58; Orr 1980, 128-129 and 198 no. 26; Orr 1980, 150, note 2; Meiggs 1982, fig. 9; De Vos/De Vos 1982, 287-288; Deiss 1985, 91 pl. (Deiss mistakenly gives the find spot as the Casa del Salone Nero) and 108; Hinz 1989, Abb. 43; Mols 1991-1992, 33-34 and fig. 2; Mols 1993, 492 and 497 tav. CXII; Mols 1993A, 13-17 and fig. 1.

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1. Wooden *AEDICULA*, figs. 146-147.
 - 2.1.1. VI 13, Casa del Salone Nero (Maiuri 1958, 239 fig. 187).
 - 2.1.2. The piece was found in fragments spread throughout the *peristylum* and in a room which is referred to in the excavation reports as 'triclinio 10' (possibly room G).
 - 2.2. 17-5-1939; 5-10-1939; 9-11-1939; 15-1-1940.
 - 2.3. In view of the fact that parts of the *aedicula* were found in the *peristylum* it is unlikely that the piece was set up in room G at the time of the eruption, as Maiuri (1958, 241) and Budetta (in: Budetta/Pagano 1988, 37) have suggested. Orr (1980, 198) accepts that the piece was not in this room but does not suggest an alternative. We can assume that the lava flow entered the garden before it filled room G, which would make the displacement of material in the opposite sequence (i.e. from room G to the garden) impossible. A more likely explanation is that the piece was standing on the upper floor in a room beside the portico of the *peristylum*. During the eruption it would have been pushed up by the lava flow and deposited in fragments on the ground floor below.
 On 7 November 1939 a statuette of Aesculapius, which may once have been part of the contents of the *aedicula*, was found in an 18th century shaft in the room referred to in the excavation reports as N. 10.
 - 3.1. Magazzino Archeologico, Herculaneum (since 1988). Before 1988 the *aedicula* was hung between the two entrances on the east wall of room G of the Casa del Salone Nero. Inv. E 1986 (capital); E 2001 (capital); E 2005 (column shaft); E 2020 (column shaft). In Budetta/Pagano 1988, 36-37, Budetta gives the inventory numbers as E 198 and E 2020. The first of these must be E 1986; she does not mention nos. 2001 and 2005.
 - 3.2. A modern plexiglass frame supports the remains of a wooden *aedicula*. The piece consists of a *pronaos* with two columns, and above them an entablature and the beginnings of a gable roof. Originally the *aedicula* may well have been deeper.
 There is a thin base board comprised of four small boards glued edge to edge. A thick batten is attached to the front and sides, the top edge of which is flush with the top of the board. The batten projects slightly under the board. Smaller battens supporting the base board were attached (possibly with glue) to the inside of the main battens at the sides.
 On the front of the base board stand two round columns. They each have a shallow double base (two *tori*) topped by a disk, which are all fashioned on the lathe from a single piece of wood. Above this comes the fluted shaft (29 flutes) with, at the top, a round, slightly projecting double rim crowned by a Corinthian capital in white marble. The capitals show traces of red paint. The columns stand right in the front corners of the base board. Two modern plexiglass supports have been placed behind them to carry the entablature. No traces of a *cella* have

survived.

On the columns (and the modern supports) rests a ceiling board which is surrounded on the front and sides by the entablature. The board consists of two small boards glued edge to edge. We do not know how this board was originally fixed in position.

The entablature supported the start of a gable roof with a pediment. At the front we can distinguish eleven elements placed one above the other. Six of these belong to the entablature, the rest to the pediment. In the entablature these are (from the bottom):

- the architrave, which is plain and is placed directly on top of the capitals;
- a narrow triple moulding which projects slightly forward of the architrave at the front and sides;
- a frieze which is recessed behind the moulding below;
- a triple moulding which projects beyond the frieze;
- a flat moulding, the *geison*, which projects beyond the moulding below;
- a quadruple moulding, projecting still further, which tops the entablature and also serves as the base for the gable roof.

All these elements run continuously round the front and right-hand side of the *aedicula*. The top two mouldings on the left-hand side are not fully preserved.

Interestingly there is more than one technique used in linking the front of the entablature to the two sides. Most of the elements are mitred but in two of them, the architrave and the frieze on the left, cross-cut ends are visible. The explanation may lie in a modern reconstruction. Originally all the elements were probably mitred at the corners.

Above the entablature sits the gable roof and, facing forwards, a pediment from which a large part is missing on the left. The original length of the pediment can be reconstructed by projecting the length of the right-hand half through on the left. The pediment consists of a number of elements which slope upwards from the sides towards the ridge of the roof.

All the elements of the pediment (the sloping legs of an isosceles triangle) rest on top of the uppermost element of the entablature and are mitred together at the ridge. The front of the bottom triangle, the tympanum, is deeply recessed relative to the foremost point of the entablature. The four mouldings which compose the pediment each project beyond the element below. They are as follows (from the bottom):

- a triple moulding;
- a plain border;
- a quadruple moulding;
- a further quadruple moulding which crowns the whole.

On the right the gable roof does not run through to the back but ends square, which makes one suspect that originally it was left largely open at the top and that only the pediment was fully finished. The front of the topmost moulding of the pediment slightly overhangs the front of the top moulding of the entablature. The elements of the entablature, however, run on beyond the end of the roof. Moreover, in the front right-hand corner we can see the top moulding of the pediment (which is completely missing on the left). It is mitred to ensure a continuous line.

- 3.3.1. and 3.3.3. Wood, carbonized. The Corinthian capitals of the columns are made of white marble, which carry traces of red paint.
- 3.3.4. The various elements of the entablature and the pediment are probably glued together. Most are mitred together in the corners, and originally this would have been the case for all of them. The other joints seem to be mortise-and-tenon joints. The boards are composed of small boards glued edge to edge.
- 3.4.1. Small sections of the battens edging the front and sides of the base board are missing. Only fragments of the smaller battens which support the base board still survive. Parts of the entablature, the bottom of the left-hand column and the top left-hand section of the pediment are missing, as are sections of the ceiling board. It is probable that the *aedicula* was originally much deeper and possessed a *cella* with double doors. At the back the piece has crumbled along

all the edges. We do not know whether it once stood on a lower section like that of cat.no. 28.

3.4.2. After discovery the *aedicula* was set up in room G on two wooden beams. These were fixed in the wall at a height of c 1.10 m. above the floor of the room (undersides). Several modern additions were made to hold the various parts of the piece upright. These were:

- part of the base board;
- two supports between the base board and the entablature at the back;
- plates to support the entablature.

The whole thing was fixed to the wall by two hooks situated behind the pediment, and then surrounded by a glass case. The antique wood was treated with a mixture of paraffin-wax and carbon powder.

In 1988 the piece was transferred to the Magazzino Archeologico and the modern wooden elements were replaced by a plexiglass frame. The old layer of paraffin-wax was also removed, making the *aedicula* much more visible. In those places in the entablature where mitres do not occur between the front and the sides, and thus where cross-cut ends are visible, we can assume that modern elements have been added, presumably soon after the discovery of the fragments.

3.5.1. H. max. 1056 mm., L. max. pres. 1103 mm. (reconstructed 1140 mm.), D. max. 349 mm.

3.5.2.

BASE

L. max.: 1050 mm.

D. max.: 295 mm.

H. base board: 15 mm.

Thickness battens along edges of base board:

28 mm. (f.); 19 mm. (l.) and 15 mm. (r.).

H. battens: 62 mm.

Missing parts battens:

front (from left to right): 108-133 mm.

end left-hand batten (from front): 140 mm.

fragments right-hand batten (from front):
103-165 mm.

Position constituent boards (from front to back):

1. 28-c 70 mm.;

2. c 70-175 mm.;

3. c 175-c 250 mm.;

4. c 250-195 mm.

W. small battens under sides of base board: c 4 cm.

COLUMNS

Distance columns from front and sides of base board: 1 cm.

Diam. base element 1: 93 mm.

Position base elem. 1 (from below): 62-73 mm.

Diam. base element 2: 63 mm.

Position base elem. 2 (from below): 73-83 mm.

Diam. shafts: 59 mm.

Position shafts (from below): 83-542 mm.

Diam. rim under capital: 70 mm.

Position rim under capital (from below): 542-552 mm.

Diam. capital: 70 mm. (u.) and 90 mm. (t.)

Position capital (from below): 552-628 mm.

CEILING BOARD

Thickness: 10 mm.

Position constituent boards from front

architrave: architrave: 0-25 mm.;

board 1: 25-135 mm.;

board 2: 135-240 mm.;

(the architrave is also 25 mm. thick at the sides.).

Entablature

Position elements entablature front (from below):

architrave: 628-678 mm.;

triple moulding: 678-693 mm.;

frieze: 693-776 mm.;

triple moulding: 776-796 mm.;

geison: 796-823 mm.;

quadruple moulding: 823-846 mm.

(the sides, where preserved, are almost identical to the front)

L. architrave: 1033 mm. (f.); 30 mm. (cross-cut) + 260 mm. (l.);

29 mm. (cross-cut) + 225 mm. (r.).

L. triple moulding: 1058 mm. (f.); 115 mm. (l.);

40 mm. (cross-cut) + 200 mm. (r.).

L. frieze: 1030 mm. (f.); 10 mm. (cross-cut) + 210 mm. (l.);

30 mm. (cross-cut) + 220 mm. (r.).

L. triple moulding: 1065 mm. (f.); 80 mm. (l.); 47 mm. (cross-cut)

+ 180 mm. (r.).

L. max. pres. geison: 1050 mm. (f.); 55 mm. (cross-cut) (l.);

57 mm. (cross-cut) + 240 mm. (r.).

L. max. pres. quadruple moulding: 1071 mm. (f.);

55 mm. (cross-cut) (l.); 78 mm. (cross-cut) + 220 mm. (r.).

GABLE ROOF

Position elements pediment (from below) measured through the middle:

tympanum: 846-975 mm.;

triple moulding: 975-1001 mm.;

flat border: 1001-1023 mm.;

quadruple moulding 1: 1023-1046 mm.;

quadruple moulding 2: 1046-1056 mm.;

L. bottom tympanum: 750 mm.

D. recess tympanum relative to front of top element entablature: 56 mm.

Projection elements beyond tympanum:
triple moulding: 0-15 mm.;
flat border: 15-24 mm.;

quadruple moulding 1: 24-59 mm.;
quadruple moulding 2: 59-87 mm.
Thickness pediment max.: 300 mm.

4. See appendix 1: 17-5-1939; 5-10-1939; 9-11-1939; 15-1-1940.
5. Maiuri 1958, 241; Maiuri 1964, 40; Zefiro 1979, 58; Orr 1980, 129 and 199 no. 30; De Vos/De Vos 1982, 302-303; Deiss 1985, 90 (who describes the *aedicula* from the Casa del Salone Nero, as can be gathered from the description of the marble capitals. However, because he also mentions finds apparently made inside it we must conclude that he is confusing this piece with the *aedicula* from the Casa del Sacello di Legno, cat.no. 29 above); Budetta/Pagano 1988, 36-37 cat. nr. 9; Fröhlich 1991, 30 Anm. 137; Mastroberto 1992, 147.

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1. AMPHORA RACK, figs. 148-149.
 - 2.1.1. V 6, shop (Casa di Nettuno ed Anfritrite).
 - 2.1.2. Ground floor, room on the street side (Maiuri 1958, 394 fig. 330); south wall.
 - 2.1.3. Shop, probably selling fluid goods (cf. Maiuri 1958, 402-403 and figs. 338 and 339).
 - 2.2. 1-2-1933.
 - 2.3. The complete inventory of the shop has survived. The remains of an antique plaited rope are hung from the first floor's reconstructed floor joist. A similar arrangement may well have served to facilitate the movement of amphoras. The walls have a simple panel decoration of red stripes on a white background.
- 3.1. In situ.
- 3.2. A rack for storing amphoras is hung along the south wall of shop V 6. Two shelves, one above the other, each with space for four amphoras, are now all that survives of the piece. It is not clear whether the rack was originally taller, since no anchoring points are preserved in the wall against which it stands (as there are in the case of the amphora rack in VI 12 (cat.no. 32)). The wall has been rebuilt in the modern period and contains no notches besides those for the surviving timbers of the rack.

The front of the rack is formed by three uprights which are attached at the top to a reconstructed joist from the floor above.

To support the shelves of the rack there are two rows of bearers which are anchored in the wall at the back and fitted square to the three uprights in the front by means of open mortise-and-tenon joints. They are thus slightly longer than they appear. The current position of the tenons is somewhat lower than it would originally have been; i.e. precisely in line with the bearers (see below, code 3.4.2.).

Shelving was originally laid on the two rows of bearers, but now the modern supporting frame intervenes between them. The shelving is made of boards: the lower shelf is constructed from seven boards glued edge to edge, but it is not clear how many boards make up the upper shelf. Nor can we see how the shelves are attached to the bearers. At the back the shelves fit to the wall, but at the front a small gap is left between the shelving and the uprights. Into this gap boards are laid on edge. They rest on the bearers and form a raised rim into which notches are cut for the necks of amphoras. The notches vary in depth to accommodate different sizes of amphora. The bodies of the amphoras rested on the shelving.

- 3.3.1. Wood, carbonized. Three samples were analysed: from the right-hand upright, the central upright and the notched board. All *Abies alba*.
- 3.3.4. It is very clear that the bearers were originally attached to the uprights with open mortise-and-tenon joints (see also code 3.4.2.). Little can be said about the joints linking the other components of the rack, since these have been cut by the modern frame.
- 3.4.1. The rack may originally have had more shelves, but the bottom ends of the uprights have crumbled away preventing us from drawing any conclusions on the matter. Judging by the other amphora racks preserved in Herculaneum, there are two possible reconstructions: the uprights may have rested on the ground (although there are no scrape marks on the floor to suggest this) which would have provided space for one or two additional shelves. (cf. cat.no. 32); or, the uprights did not extend much further than they do now, and were rounded off as in cat.no. 33.
- 3.4.2. After discovery a supporting frame of metal and glass was built to hold the remains together. The uprights were hung from a modern joist which replaced the original joist from the floor above. An old photograph in the photo archive at Pompeii (negative number E/C 260, taken in 1933) shows that the reconstruction was originally accurate. Currently the pieces which make up the uprights have shifted somewhat, whereby the tenons of the open mortise-and-tenon joints are no longer in line with the bearers of which they were once a part. All the wooden remains have been treated with a mixture of paraffin-wax and carbon powder. In September 1989 various glass plates were broken and displaced. Where this has happened fragments of the antique wood are missing. In the left-hand upright a fragment containing the cross-cut end of the mortise-and-tenon joint is threatening to break off.
(n.b. a new reconstruction has been completed since this study was made.).
- 3.5.1. H. max. pres. c 1365 mm., L. 1650 mm., D. 863 mm.
- 3.5.2.
- | | |
|--|--|
| <p>UPRIGHTS
Position from top of reconstructed joist
(numbered from left to right):</p> <ol style="list-style-type: none"> 1. 50-1375 mm.; 2. 20-1315 mm.; 3. 10-1363 mm. <p>Position from left to right:</p> <ol style="list-style-type: none"> 1. 0-65 mm.; 2. 772-835 mm.; 3. 1551-1612 mm. <p>Position from back wall: 832-863 mm.</p> <p>BEARERS
Position from top of floor joist:
row 1: 815-863 mm.; </p> | <p>SHELVING
H. 30 mm.
L. 1610 mm.
W. 810 mm.</p> <p>NOTCHED BOARDS
Thickness: 22 mm.
Position from top of reconstructed joist:</p> <ol style="list-style-type: none"> 1. c 600-808 mm.; 2. c 1080-1270 mm. <p>Position notches (from left to right):</p> <ol style="list-style-type: none"> 1. 113-328 mm.; 2. 435-725 mm.; 3. 886-1190 mm.; 4. 1290-1500 mm. <p>D. notches in top edge of upper board measured from lower edge max.:</p> <ol style="list-style-type: none"> 1. 113 mm.; 2. 119 mm.; 3. 108 mm.; 4. 110 mm. <p>D. notches in top edge of lower board measured from lower edge max.: 1. 113 mm.; 2. 116 mm.; 3. 108 mm.; 4. 110 mm.</p> |
| <p>row 2: 1276-1328 mm.
L. between uprights and wall: 832 mm.
Thickness: c 65 mm.
Current position tenons in uprights, from top of joist:</p> <p>Upright 1. 870-920 mm. and 1310-1375 mm.;</p> <p>Upright 2. 870-930 mm. (second bearer missing);</p> <p>Upright 3. 830-880 mm. and 1285-1335 mm.
W. tenons: c 25 mm.</p> | |
4. See appendix 1: 1-2-1933 and Descrizione di ambienti.

5. Illustrazione Italiana 1933; Brendel 1934, 466-467; Confalonieri 1958, 70, fig. 45; Maiuri 1958, 402-403 and fig. 339 and tav. XXXII and XXXIV; Maiuri 1958A, 368; Cretella 1961, fig. between p. 40 and 41; Maiuri 1961, 136-137; Grant 1971, 193 (fig.); De Franciscis 1974, 60 and tav. 61; Packer 1978, 49 and 50 fig. 32; Bracco 1982, tav. 1; De Vos/De Vos 1982, 293; Clarke 1991, 250 and 253, fig. 253; photo: Soprintendenza Archeologica di Pompei, Archivio fotografico neg.no. E/C 260.

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1. WOODEN AMPHORA RACK, figs. 150-151.
 - 2.1.1. VI 12, shop.
 - 2.1.2. Room opening onto the *Decumanus Maximus*, ground floor; west wall.
 - 2.1.3. Shop/workshop.
 - 2.2. Date unknown, but probably between 1958 and 1961 (the room is not yet registered in Maiuri 1958, 239 fig. 187).
 - 2.3. The room contains a display case in which the remains of metal vessels (plus various pieces of wood and metal) are exhibited. There is also a card which states: 'bottega di un plumbarius'. The fact that such a rack stands in a metal workers workshop could indicate that the function of the shop had changed in the period preceding the eruption and that the new owner had simply left the rack where it was.
 - 3.1. In situ.
 - 3.2. A very large rack originally stood against the north wall of a room which served as a shop. Judging by the current wooden remains and the holes in the wall to which the rack was attached, the original version would have consisted of two shelves (placed one above the other), each with room for around twelve amphoras. The holes once held the ends of horizontal bearers which would have carried shelving. There are two distinct rows of holes and traces of wood still remain in holes 2 and 5 (counting from right to left) on the bottom row (row 1) and in holes 3 and 5 on the top row (row 2). Remains of the rack itself now occupy the space between the wall on the right and the second hole of row 2. In this section there is room for four amphoras.
 The uprights rested on the floor of the room, as is attested by damage to the floor itself. In the top right-hand corner a section of one of these uprights is now suspended from a joist of the floor above via a modern metal rod. The upright has crumbled at both ends. It probably ran through from the floor to the ceiling and supported both the top and bottom layers of the rack. A fragment of the left-hand upright is currently preserved on top of the remains of the rack.
 A horizontal bearer is fitted into the back to the upright, probably with a mortise-and-tenon joint. It runs back obliquely to the right and is anchored in the wall. The form of the corresponding hole below (row 1) suggests that here too a bearer was let into the wall at an angle. The reason for this is not known. Judging by the form of the other holes, the other bearers were fitted square to the wall. This is certainly the case with the remains of a second bearer, visible to the left of the oblique example, about half of which is preserved.
 The bearers carried a shelf which ran between the uprights and the back wall and covered the full width of the room. The right-hand end of this shelf is preserved up to the second bearer. It was probably composed of a number of boards glued edge to edge. The modern layer of paraffin-wax makes it impossible to distinguish the boards from each other. There is no sign of how the shelf was attached, if at all, to the bearers.
 Along the front of the shelf, just behind the uprights, there are remnants of a board

standing on edge. We cannot see not how it is attached. In what remains there are four curved notches cut to carry the necks of amphoras. Confirmation of this assumption is provided by cat.no. 31, where amphoras were discovered still in situ. The top edge of the board is slightly rounded between the notches.

Irregularities, which may have been made by a plane, are visible in the front of the board. The shelf and the notched board are plastered in on the right.

3.3.1. Wood, carbonized.

3.3.4. The bearers and the uprights appear to be joined by mortise-and-tenon joints. The shelf may simply have been laid loose on the bearers. The notched board seems to have been fixed to the uprights with nails or dowels. The uprights themselves originally rested on the ground and the bearers were anchored in the wall at the back. It is not possible to see whether the shelf is composed of different boards.

3.4.1. Only a limited part of the rack is preserved, enough for four amphoras. Originally there would have been two shelves, each with room for twelve amphoras. This can be deduced from the surviving fragments of bearers and from the holes in the wall to the left of the remains which clearly once took further bearers. It should be said that the wall seems to have been partly restored. It is not certain whether the holes have been reconstructed in the correct places and in the correct number, although their present position would appear to be accurate.

3.4.2. The scanty remains of the rack have been reconstructed from a number of fragments and are now supported by a modern frame made of glass and metal. One disadvantage of this method of reconstruction is that it encourages mildew to form between the glass plate and the shelf. It would be advisable to look for an alternative solution. The wooden remains are treated with paraffin-wax mixed with carbon-powder.

3.5.1. H. max. cons. 765 mm., L. max. cons. 1198 mm., D. c 58 cm.

3.5.2.

NOTCHES FOR BEARERS

Position notches in both rows
(from right to left):

1. 47-55 cm.;
2. 1235-1295 mm.;
3. 1869-1929 mm.;
4. 2479-2536 mm.;
5. 3113-4173 mm.

Wall at: 4518 mm.

Position above floor:

Row 1: c 146-153 cm.;

Row 2: c 215.5-224 cm.

UPRIGHTS

Position upright in situ:

2155-2920 mm. above floor

(= H. max. pres. 765 mm.);

55-64 cm. from wall on the right.

Thickness 65 mm.

Loose fragment upright: thickness 50 mm.;

W. 75 mm.; L. 21 cm.

BEARERS

Position preserved bearers:

1. 47-55 mm. (b.) and 55-64 (f.) from right wall;

2. 1235-1295 mm. from right wall.

H. 70 mm.

L. 1. 510 mm. from wall (without joint).

Max. pres. L. 2. 360 mm. from wall.

SHELF

Thickness shelf c 33 mm.

L. shelf 510 mm.

NOTCHED BOARD

Max. H. 190 mm.

Thickness 20 mm.

D. notches (measured from the top) c 6.5 cm.

Position notches (from right to left):

1. 45-260 mm.;
2. 310-? mm. (end not measureable behind upright);
3. 646-870 mm.;
4. 910-1180 mm.

Extension of shelf and notched board into plaster on right: 40 mm.

1. WOODEN AMPHORA RACK, figs. 152-153.
 - 2.1.1. *Insula Orientalis* II 9.
 - 2.1.2. Ground floor room opening onto the street (Maiuri 1958, 462 and fig. 416); east wall.
 - 2.1.3. Shop, possibly selling fluid products (cf. Maiuri 1958, 462).
 - 2.2. 31-12-1936.
 - 2.3. The room also contains the remains of a shop counter and a staircase leading to the upper floor. It has a rough *opus signinum* floor and a Fourth Style wall painting. In the north wall there is an apse containing a small altar. The remains of a toilet and a hearth stand against the south wall. The full width of the shop entrance could be closed off. There was also a passage to a backroom.
 - 3.1. In situ.
 - 3.2. A rack with room for nine amphoras hangs from the ceiling against the east wall. At the front four uprights are suspended from the floor joists of the room above. The sides of each upright are rounded at the bottom; the front and rear faces remain flat.

Four horizontal bearers are attached square to the back of each upright and anchored in the wall behind, partly above the entrance to the backroom. The joints used between the uprights and the bearers were probably closed mortise-and-tenons, but they are now cut by the modern supporting frame and can no longer be studied.

A shelf, composed of a number of boards, lies on the bearers. There may be five of them, but the modern layer of paraffin-wax makes it impossible to be sure. The first two boards at the front of the rack are laid with the grain clearly running in opposite directions. The boards are probably glued edge to edge. The shelf takes up the full width of the rack, running to the outside edges of the two outer bearers. Depthwise it runs from the wall to about 2 cm. short of the back of the uprights.

The small gap between the shelf and the uprights is filled by a board, set on edge, in which nine semi-circular notches are cut to take the necks of amphoras. Between the notches the top edge of the board has been slightly rounded with a file.
 - 3.3.1. Wood, carbonized. Sample from right-hand upright: *Abies alba*.
 - 3.3.4. The four bearers are let into the wall at the back. At the front they were originally fitted into the four uprights using mortise-and-tenon joints, which are now cut by the modern frame. Any other joints can only be guessed at.
 - 3.4.1. It is not clear how the uprights were originally attached to the floor above, since the current joists are modern. The reconstruction may indeed be accurate. The rack is otherwise largely intact, except for small fragments and a large part of the right-hand upright. At the end of 1989 there were also pieces missing from bearers 1 and 2 (at 40 and 25 cm. respectively).
 - 3.4.2. After discovery the remains were treated with a mixture of paraffin-wax and carbon powder. A frame of metal strips and glass plates has been built around them and the whole construction hung from the reconstructed floor of the upper storey. The frame cuts through the original wood joints.
 - 3.5.1. H. 1005 mm., L. 2995 mm., D. c 84 cm.

3.5.2.

UPRIGHTS

H. 1005 mm.

Thickness 40 mm.

Position (from left to right):

1. 0-78 mm.;

2. 960-1037 mm.;

3. 1932-2011 mm.;

4. 2911-2990 mm.

Distance between floor and uprights: 182 cm.

BEARERS

H. 36 mm.

L. 80 cm. (excluding section in wall).

Thickness (from left to right):

1. 72 mm.;

2. 77 mm.;

3. 74 mm.;

4. 79 mm.

Distance between top of uprights and top of bearers: 820 mm.

SHELF

Front board W.: 16 mm.; H. 20 mm.

D. from wall to c 2 cm. before the back of the uprights: c 75 cm.

NOTCHED BOARD

H. max.: 250 mm.;

Thickness: 20 mm.

D. notches: 155 mm.

Position notches (from the right to the numbered upright)

1. 0-244 mm.

310-564 mm.

630 mm.-end.

2. 0-253 mm.

323-580 mm.

643 mm.-end.

3. 0-251 mm.

315 mm.-568 mm.

640 mm.-end.

4. See appendix 1: 31-12-1936.

5. Maiuri 1958, 462-463, fig. 419 (reconstruction drawing); Maiuri 1964, 57; Cerulli Irelli 1969, tav. 15; De Franciscis 1974, 54 and tav. 65 (with amphoras in rack!); Adam 1984, 220-221, figs. 480-482.

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1. WOODEN RACK, figs. 154-155.

2.1.1. V 12.

2.1.2. Ground floor, room b opening onto the street side (Maiuri 1958, 247 fig. 193); west wall.

2.1.3. Shop

2.2. 22-3-1939 and 11-4-1939.

2.3. At the front room b could be closed off across almost its full width. At the back a door connected the shop to house V 11. The floor of the room is in *opus signinum* and the wall has a Fourth Style painting with medallions and still lifes set in squares. Organic material was found preserved on the rack, probably coming from the brooms which Maiuri (1958, 252) tells us were found there: '... un ammasso di scope di fibra vegetale, probabilmente di saggina, carbonizzate o minerallizzate secondo il consueto processo che subisce ogni materiale vegetale nel terreno del seppellimento ad Ercolano'.

3.1. In situ.

3.2. Wooden shop rack with two uprights at the front. These are linked at the bottom by a board standing on edge and fixed to the front of them. Although many fragments are missing from this board, the top edge runs right through in an unbroken line and is virtually horizontal. The bottom edge remains unexcavated.

Between the two uprights run four horizontal rails, equally spaced, while at the top a final batten runs from the outside of the right-hand upright to slightly beyond the rack on the left.

Here, at heights corresponding to the preserved rails, we find fragments of further rails of the same type. These make one suspect that the rack was originally larger, perhaps twice its present size.

At the same height as the rails there are corresponding transverse bearers. These are fitted square to the back of the uprights and anchored in the wall at the back. All the joints between uprights and the rails and bearers are mortise-and-tenon joints.

Behind the board at the bottom of the uprights there are the scanty remains of a shelf, which was supported in the front by a batten fitted in the angle between the board and the shelf itself. It is unclear how it was supported at the back. The board also protrudes somewhat beyond the present remains of the rack on the left, an additional argument for believing that the original piece extended in this direction.

Nothing remains of the shelf on the lowest rail, but here the attention is now drawn by a modern display case in which the contents of the rack are exhibited.

On the second rail (and on the second pair of bearers) a shelf is preserved virtually intact. It occupies the whole space between and behind the uprights. To achieve this, the front corners of the shelf have been notched to fit around the uprights.

From the grain of the wood at the left-hand end of the shelf, we can conclude that it was composed from four boards glued edge to edge. This shelf also protrudes slightly beyond the left upright.

The top two shelves (i.e. those between the third and fourth rails and between the fourth horizontal rail and the top batten) are at the front divided into three by two pairs of short uprights, placed one above the other. Originally they were probably part of two rows of three square compartments. The only remaining signs of these are found behind the middle compartment on the lower row, where there are fragments of panels on the bottom, both sides and the top, which would have created a separate compartment. In the reconstruction all four panels are positioned towards the inside of the compartment: i.e. the two side panels rest on the bottom panel and the top panel fits between the two side panels. The right-hand panel is composed of four horizontal slats. The modern layer of paraffin-wax prevents us from seeing the construction of the other panels. There are no visible attachment points. The panels are incomplete at the back but look very much as if they once ran through to the wall. In the preserved part of the rack there were probably two rows of three compartments, each surrounded by panels.

- 3.3.1. Wood, carbonized.
- 3.3.4. The two main uprights rest on the floor of the room. The bearers are let into the wall at the back, and in the front were originally fitted to the back of the uprights using mortise-and-tenon joints. These joints are now cut by the modern supporting frame.
- 3.4.1. The bottom and second shelves of the rack have disappeared. There are also a number of panels or fragments of panels missing from the compartments at the top. The fact that all the rails project somewhat beyond the end of the preserved section suggest that the piece was originally larger. There is space along the wall for a rack twice the size. The wall has been completely rebuilt in the modern period, leaving no evidence (i.e. holes in the wall) for the possible extension of the rack.
- 3.4.2. After discovery, the remains were rubbed with a mixture of paraffin-wax and carbon powder and a frame of metal and glass was built to support them. There was also a case of wood and glass made to protect the organic material on the second shelf from decay.
- 3.5.1. H. max. 2327 mm., L. max. cons. 1460 mm., D. 459 mm. (excluding the sections anchored in the wall which cannot be studied).

3.5.2.

UPRIGHTS

H. from floor: 2272 mm. (l.) and 2245 mm. (r.)
(the difference between the heights is due to the angle of the floor. The height measurements are therefore taken from the top of the board fitted to the front of the uprights at the bottom).

W. 68 mm.

Thickness: 40 mm.

Position (from right to left):

1. 0-68 mm.;

2. 1212-1280 mm.

Position front surface from back wall: 445 mm.

BOTTOM BOARD

Thickness: 14 mm.

Excavated height: 182 mm. (l.) and 153 mm. (r.)

Missing section right c 4 cm.

RAILS/BATTEN

Position rails from top of bottom shelf (from below):

1. 405-473 mm. (l.);

413-477 mm. (r.);

2. 932-1000 mm. (l.);

933-999 mm. (r.);

3. 1459-1526 mm. (l.);

1467-1533 mm. (r.);

4. 1793-1860 mm. (l.);

1797-1863 mm. (r.).

Position batten from top of shelf: 2090-2145 mm. (r.) and 2087-2147 mm. (l.)

Projection rails beyond left-hand upright:

1. 137 mm.;

2. 180 mm.;

3. 147 mm.;

4. 143 mm.

Projection batten beyond left-hand upright: 33 mm.

Thickness rails and batten: c 4 cm.

BEARERS

H. c 4 cm.; L. c 40 cm.

Thickness: c 7 cm.

SHELVES

Thickness fragment bottom shelf: 14 mm.

W. max. pres. fragment bottom shelf: 7 cm.

H. supporting batten: 30 mm.

Thickness supporting batten: 32 mm.

Thickness third shelf: 15 mm.

Projection third shelf beyond left-hand upright: 155 mm.

SHORT UPRIGHTS

Thickness: 40 mm.

Position (from right to left):

1. 417-458 mm.;

2. 798-865 mm.

Thickness panels: 10 mm.

4. See appendix 1: 22-3-1939 and 11-4-1939.

5. Maiuri 1958, 252 and fig. 199; Maiuri 1964, 46; De Franciscis 1974, 51 and tav. 59.

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1. WOODEN CUPBOARD, fig. 156.

2.1.1 III 14, Casa a Graticcio.

2.1.2. First floor, room 1 (Maiuri 1958, 416 fig. 354); south wall, west corner.

2.1.3. Bedroom.

2.2. 13-2-1928.

2.3. See cat.no. 4, code 2.3.

3.1. In situ.

3.2. Cupboard, hung on the south wall of room 1, of which only the back still remains. This is constructed from a panel surrounded on three sides (all but the top) by a frame. The frame is assembled from three pieces, two stiles and one rail (at the bottom), all of which project slightly in front of the panel. The panel and the stiles end at the same height at the top but at the bottom the panel is let into the rail. The bottom edge of the rail is flush with the ends of the stiles.

About one third of the way up the panel a thin horizontal batten with a rounded surface runs the full width of the panel. The function of this piece is unclear.

No points of attachment for other elements can be distinguished, making it impossible to attempt a reconstruction. The direction of the grain is quite visible. It runs vertically in the panel and the sides of the frame and horizontally in the rail and the batten. We can gather from the description in the excavation reports that the cupboard was fixed to the wall with two nails. These nails can no longer be seen.

- 3.3.1. Wood, carbonized. Two samples, one from the back of the panel and one from the right-hand stile: both *Abies alba*.
- 3.3.4. Almost nothing can be seen of any joints. The frame is probably assembled using mortise-and-tenon joints. The panel is probably loosely inserted. The lateral batten is probably glued to the panel.
- 3.4.1. The excavation discovered only the back of this piece, and here too there are pieces missing. These include the bottom corner of the left-hand stile and a section in the middle of the right-hand stile. These have been reconstructed from many small fragments. The piece is in a very poor condition.
- 3.4.2. The many fragments in which the piece was found have been treated with a mixture of paraffin-wax and carbon powder. The remains are surrounded by a modern frame made of glass plates and strips of metal.
- 3.5.1. H. max. pres. 775 mm., L. max. 599 mm., Thickness max. 5 cm.
- 3.5.2.

<p>BACK</p> <p>Bottom above floor: 1475 mm.</p> <p>Distance right-hand side from west wall: 36 mm.</p> <p>Position of vertical elements (from left to right);</p> <p>stile: 0-60 mm.;</p> <p>panel: 60-536 mm.;</p> <p>stile: 536-599 mm..</p>	<p>Position horizontal elements (from bottom):</p> <p>rail: 0-76 mm.;</p> <p>panel: 76-775 mm.;</p> <p>batten: 223-267 mm..</p> <p>Thickness stiles and rail: 50 mm.</p> <p>Thickness panel: c 2 cm.</p> <p>Thickness batten: max. 4 mm.</p>
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- 4. See appendix 1: 13-2-1928.
- 5. Bottazzi 1928, 3; Maiuri 1932, 64; Maiuri 1958, 417.

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- 1. WOODEN CUPBOARD, figs. 157-158.
- 2.1.1. III 14, Casa a Graticcio.
- 2.1.2. First floor, room 2 (Maiuri 1958, 416 fig. 354); south wall, west corner.
- 2.1.3. Living room also used for eating (cf. cat.no. 5).
- 2.2. 16 and 17-2-1928.
- 2.3. See cat.no. 5, code 2.3.

3.1. In situ.

- 3.2. The right-hand side of the cupboard has been slightly displaced from its original position. It was probably forced against the west wall of the room by the force of the lava flow during the eruption. Examination of the cupboard as a whole is hindered by a modern display case which has been placed around the remains. Of the outside of the piece, only the front and the left-hand side can be properly studied.

The front is constructed as follows: at the two sides stand corner uprights which probably ran the full height of the piece. Their original height can be reconstructed from the back of the cupboard which is fully preserved. Between the uprights the front is built up from various elements. At the bottom is a rail, above which is a slightly inset panel. The rail and the panel run the full width between the uprights. Next comes another rail, projecting slightly beyond the panel, and above this was the door (or doors) of which nothing remains. The door or doors were flanked on each side by further panels. Thus only the middle could be opened. Two cylindrical bone segments from a hinge band have survived here. The lower one is larger and is scored with a simple three-line decoration. The other is smaller and undecorated. The large one would have formed one end of a hinge band and the small one would have been one of a number of segments held between two such large ones (see § 4.7.2.). Due to the poor state of preservation of the front, no further technical details can be given.

The left-hand side is not fully excavated at the bottom and is only visible from c 10 cm. above the floor. At the top a large part is missing. The surface is composed of the two corner uprights with a central stile, creating space for two recessed panels. At the top the height of the remains decreases towards the front. The top rail has entirely disappeared, but its equivalent is still visible (but not measurable) on the right-hand side. Indeed, the construction we find on the outside of the left-hand side is visible on the inside of the right-hand side. The inside on the left is obscured by the modern layer of paraffin-wax.

The inside of the cupboard reveals that the construction of the back was very like that of the sides. Here again a partition into stiles and panels can be distinguished, with three panels separated by two stiles and two uprights forming the corners. As in the left-hand side, the bottom (c 10 cm.) has not been excavated. The modern display case allows no more than an estimated measurements for the stiles and panels. The back is topped by a rail which runs the full width of the piece.

Inside the remains of shelf supports are visible. According to the excavation reports these were nailed to the walls of the cupboard. At the height of the lowest group of supports there are vestiges of what may have been part of a shelf.

3.3.1. Wood, carbonized.

3.3.3. The remaining hinge segment is made of bone.

3.3.4. Nothing can be said with any certainty about the wood joints used.

- 3.4.1. While the cupboard is quite well preserved at the bottom, large pieces of the front and left-hand side have disappeared at the top. The top of the cupboard is missing completely as is a large part of the left-hand top corner in the front. The door or doors are also missing, as is part of the top right-hand corner in the front. Pieces are missing from the tops of both the front uprights. Only one of the two shelves has left fragments which can be studied.

- 3.4.2. After discovery the remains were treated with a mixture of paraffin-wax and carbon powder. They have been placed inside a modern display case. The cupboard has not yet been fully excavated and there is still volcanic material between the back and the south wall and between the right-hand side and the west wall. A layer of modern cement has apparently been applied here. The base of the cupboard has not yet been excavated.

3.5.1. H. max. cons. 149 cm., L. 93.5 cm., D. 69 cm.

3.5.2.

FRONT

H. max. pres. uprights: 119 cm. (l.) and 126.5 cm. (r.).

H. reconstructed uprights: 149 cm.

Construction (from left to right):

upright: 0-8.5 cm.;

panel: 8.5-19 cm.;

space for hinges: 19-21.5 cm.;

space for door(s): 21.5-66 cm.;

panel: 66-83.5 cm.;

upright: 83.5-93.5 cm.

Position elements between uprights (from below):

rail: 0-6 cm.;

panel: 6-16.5 cm.;

rail: 16.5-22 cm.;

hinge segments: 22-31 and 33-36 cm.

H. bottom rail: 6 cm.

Recess panel behind bottom rail: 3 cm.

Recess panel behind upper rail: 1.5 cm.

Diam. hinge segments: c 3 cm.

SIDES

Recess panels: c 1.5 cm.

Construction left-hand side (from back to front):

upright: 0-6 cm.;

panel: 6-33 cm.;

stile: 33-39 cm.;

panel: 39-63 cm.;

upright: 63-69 cm.

Height preserved (from back to front):

1469-1190 mm.

BACK/INSIDE

H. back right: 149 cm.

H. top rail: 8 cm.

Position shelf supports (from below):

c 57-59 cm. and c 86-88 cm.

4. See appendix 1: 16 and 17-2-1928 and *Descrizione di ambienti* for 3-2-1929.

5. Bottazzi 1928, 3; Maiuri 1932, 64; Maiuri 1958, 417; Maiuri 1964, 31; Packer 1975, 141; Orr 1980, 160 ('This armarium probably served as a domestic shrine'; Orr confuses the cupboard with an *aedicula*, now lost, as a result of a passage in Maiuri 1958, 417.); De Vos/De Vos 1982, 270; De Kind 1992, 150.

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1. WOODEN CUPBOARD, FIGS. 159-160.

2.1.1. Bottega V 17 (Maiuri 1958, 222 pl. 174).

2.1.2. Room on the upper floor; north-west corner (cf. Maiuri 1958 II, tav. XXII). An *aedicula* was found in the room behind (cat.no. 28; see also Maiuri 1958, 239).

2.1.3. Kitchen.

2.2. 8, 11 and 12-11-1937.

2.3. Terracotta vessels were found in the cupboard (inv. E 1786-1797).

3.1. V 17, ground floor, a shop on the *Decumanus Maximus*, room A (Maiuri 1958, 238).

3.2. The cupboard comes from the upper floor of the shop in which it now stands. It has a low base with mouldings which slightly project at the front and the sides.

The four corners of the cupboard are formed by four uprights which run from the base through to the very top of the piece. Here they are linked by four horizontal rails. In the front, beside each upright, there is a narrow vertical panel, slightly inset, and between these panels there were originally two doors of which only the right-hand example is preserved. A vertical batten is attached to the left-hand side of the right-hand door and may have served to cover the gap between the two doors. Nothing remains of the hinge upon which the door turned. The

groove which held it can still be seen, running the full height of the right-hand side of the door. We can postulate two possible hinge mechanisms: a 'piano hinge', built up from bone or wooden segments like the hinge in the cupboard (see below), or two or more large metal hinges.

The door is constructed from a framing of two stiles and three rails which encloses two panels, one above the other. A decorative groove runs along the middle of the top rail for its full length. It was probably repeated in all the stiles and rails of the door but cannot be distinguished elsewhere. Where the framing meets the panels it carries a moulding which is mitred into the corners.

The sides are almost identical in construction. Here the uprights are linked at the bottom, as well as at the top, by rail. Between the two rails run two stiles, creating the framework for three vertical panels.

The back of the cupboard has been restored in such a way that little can be said about its original structure. Only the basic framework of uprights and rails is definitely antique. This may well have been filled in by further stiles and rails containing more panels.

The top consists of a board let into the top edges of the side rails. Modern wood appears to have been used here. We can assume that the rails carry rebates to take this board.

Because the left-hand door has disappeared the inside of the cupboard can also be partially studied. Two shelves are visible here. Below the bottom shelf there is a small door, which closely resembles the surviving cupboard door: a framing of two stiles and three rails enclosing two panels, one above the other. Here too the panels are surrounded by mouldings mitred into the corners and, as in the large door, a decorative groove was probably cut into all the elements of the framework. In this case it is only visible in the middle rail. The wooden hinge has here survived intact and runs the full height of the door. It assembled from thirteen cylindrical segments which are connected alternately with the door and the stile to its left. These segments could move against each other, thus forming a hinge (see § 4.7.2). Small battens are fitted along the top and left-hand side of the small door, but of its counterpart on the right nothing is preserved.

- 3.3.1. Wood, carbonized. Two samples, from back of right-hand side panel: unidentifiable.
- 3.3.4. Mortise-and-tenon joints and loose fitting panels have been used.
- 3.4.1. The left-hand door is completely missing, as is the right-hand door below the bottom shelf inside the cupboard. The modern layer of paraffin-wax prevents us from seeing whether any further elements are missing. This has, however, partly crumbled at the back, revealing a surface largely constructed from modern chicken wire.
- 3.4.2. The cupboard was restored after discovery. Modern wooden strips have been placed at various places and the back has been filled in with chicken wire. These modern additions are virtually invisible because the whole piece has been treated with a mixture of paraffin-wax and carbon powder. A modern display case has been placed around the cupboard. At present the glass plate at the back has been removed.
- 3.5.1. H. 1312 mm., L. 790 mm., D. 590 mm. The display case makes it impossible to give all the measurements with complete accuracy. Furthermore, many details are obscured by the modern layer of paraffin-wax.

3.5.2.

BASE

H. c 2 cm.

Projection base sides: 18 mm.

Projection base front: 23 mm.

FRONT

Position uprights: 20-1312 mm.

H. top rail: 78 mm.

recess panels relative to framework: 12 mm.

Position elements (from left to right):
 upright: 0-7 cm.;
 panel beside door: 7-16 cm.;
 space for vanished hinge and left-hand door:
 16-40 cm.;
 batten: 40-45 cm.;
 door: 45-59 cm.;
 space for hinges: 59-63 cm.;
 panel beside door: 63-72 cm.;
 upright: 72-79 cm.

Construction of door (from below):
 rail: 2-9.5 cm.;
 panel: 9.5-72 cm.;
 rail: 72-85.5 cm.;
 panel: 85.5-115.5 cm.;
 rail: 115.5-123.5 cm.
 recess panel relative to upright: 1 cm.

SIDES

H. bottom rail: 40 mm.
 H. top rail: 68 mm.
 recess panels: 11 mm.

Construction (from front to back):
 where 1 = left-hand side, 2 = right-hand side
 1. 0-48 mm.;
 2. 0-43 mm. (upright);
 1. 48-168 mm.;
 2. 43-171 mm. (panel);
 1. 168-230 mm.;
 2. 171-240 mm. (stile);
 1. 230-356 mm.;
 2. 240-354 mm. (panel);
 1. 356-420 mm.;

2. 354-420 mm. (stile);
 1. 420-545 mm.;
 2. 420-536 mm. (panel);
 1. 545-590 mm.;
 2. 536-586 mm. (upright).

BACK

Thickness upright: 40 mm. (l.) and 50 mm. (r.)
 H. rail: 50 mm. (u.) and 53 mm. (t.)
 Recess panel relative to uprights: 12 mm.

INSIDE

Position shelves (from below):
 42-44 cm.
 82-84 cm.

Construction between base and bottom shelf (from below):
 H. small door: 2-36.5 cm.;
 top of bottom door panel: 21 cm.;
 rail between door panels: 21-25 cm.;
 top door panel: 25-32 cm.;
 top rail: 32-36.5 cm.;
 batten filling gap between door and bottom shelf: 36.5-42 cm.

H. hinge segments: 1.5-2 cm.

Construction small door from left-hand side of cupboard
 (from left to right):
 batten bridging gap to door: 16-21.5 cm.;
 hinge: 21.5-23.5 cm.;
 stile: 23.5-28.5 cm.;
 panels: 28.5-35.5 cm.
 stile: 35.5-38 cm.

4. See appendix 1: 8, 11 and 12-11-1937.
5. Horn 1938, 708; Maiuri 1958, 239 and tav. XXII.

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1. WALL CUPBOARD, figs. 161 and 164.
 - 2.1.1. *Insula Orientalis* I 1, Casa della Gemma.
 - 2.1.2. Room N. 1 (Maiuri 1958, 337 fig. 266); a recess in the north wall.
 - 2.1.3. Service room, perhaps a bed-sitting room for a servant.
 - 2.2. 22-3-1934.
 - 2.3. Maiuri (1958, 338) describes the room as: 'N. 1.- Cella ostiaria: pavimento in signino, pareti bianche, armadietto a muro con il sol ripiano di una tavola, e alcune poche rustiche suppellettili sfuggite ai primi ricercatori: una boccia di vetro, un unguentario, un vasetto a volto umano.' The contents of the cupboard consisted primarily of terracotta, glass and bronze vessels (inv. E 1270-1274). The room had an *opus signinum* floor and white plastered walls.

- 3.1. In situ.
- 3.2. A recess for a small wall cupboard was cut into the north wall. On the inside the cupboard is plastered like the rest of the room. In the middle was a wooden shelf, which sat on a ledge cut into the plaster on the three sides of the recess. The remains of a door (thickness 11 mm.), which may have belonged to the cupboard, were found during the excavation.
- 3.3.1. and 3.3.3. Wall cupboard, plastered on the inside, with one wooden shelf.
- 3.3.4. The shelf was fitted to a ledge cut in the plaster.
- 3.4.1. The only wooden remains are small remnants of the shelf. The door no longer exists.
- 3.4.2. A glass door with a metal rim has been placed in front of the recess.
- 3.5.1. H. 47 cm., L. 60.5 cm., D. 22 cm.
- 3.5.2.

Recess in wall: H. 47 cm. W. 60.5 cm.	D. 22 cm. D. ledge for shelf (from below): 23.5-24.5 cm.
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4. See appendix 1, 22-3-1934 and the *Descrizione di ambienti* for the Casa della Gemma.
5. Maiuri 1958, 338.

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1. SMALL WOODEN CUPBOARD, figs. 162-163 and 165.
- 2.1.1. V 15, Casa del Bicentenario.
- 2.1.2. First floor, room a (Maiuri 1958, 234 fig. 184); west wall.
- 2.1.3. For a long time there was fierce discussion about the function of this room. For a summary of this discussion and an extensive bibliography, please see Falanga (1981, *passim*, esp. p. 37-50 and 81-118). It may have been one of the service rooms, perhaps a room for one or more servants (cf. Falanga 1981, 18). Yet whatever the function of the room, it contains no evidence for the presence of Christians in Herculaneum (cf. Falanga 1981, *passim*; De Kind 1990, 201-202 and 263).
- 2.2. 28-1, 3-2 and 8-2-1938. Falanga (1981, 9) thinks that the cupboard was found before the end of 1937.
- 2.3. Besides the cupboard, the room contained a bed along the north wall, a bronze casserole (inv. E 1868), a terracotta plate (inv. E 1870) and some figs. The cupboard itself contained two terracotta lamps (inv. E 1875 and 1876), the remains of a mug and a dice (inv. E 1877). The interest accorded to the room derives from a notch cut in the wall for a shelf support. In the past this was often interpreted as a cross (cf. Maiuri 1939, 203-206).
- 3.2. The unstable nature of the building makes it impossible to study this piece from close range. Access to the room is prevented by a modern door which is kept locked and sealed. In 1985 we were able to see the piece, but only from a distance. What follows is a brief summary of the

main points so far written about the cupboard (and the so-called 'cross' found above it):

Maiuri 1939, 211-215: 'E' un armadiolo basso (alt. m. 1,04 con i piedi; largh. m 0,43 sul fronte; m. 0,42 sulla fiancata), di esecuzione piuttosto dozzinale, terminante superiormente con un ripiano chiuso da tre lati da un margine rilevato, sì da dare l'impressione per la sua forma e per la sua altezza, di una vera e propria ara lignea. <...> L'armadiolo-ara poggiava su quattro rozzi piedi <...>. All'interno vi erano, è vero, oltre al piano di fondo, due ripiani di scaffalatura'.

Orr 1980, 197: 'V 15. House (Casa del Bicentenario) Plate V figures 17 and 18 (p. 208) Room A (second storey), west wall: stucco panel and wooden cupboard. Imprint of cross(?) H. 0,43 m. A small carbonized wooden cupboard was found in the northwest corner of the room. Maiuri believed that this was a wooden altar. Unfortunately, this room was tightly locked and we were unable to examine it. The cross imprint is on the west wall and two ancient nail holes are visible. The wooden cupboard may not have been associated with the cross. Maiuri was convinced that this was the shrine of one of the earliest Roman converts to Christianity.'

Orr 1978, 586: 'This 'cross', however, may actually be the remains of a shelf support.'

Falanga (1981, 55-60, app.) thought that the supposed cross was the fixing point for a shelf. As a parallel he gives a cast made by De Caro at Boscoreale. This has the form of cross and is situated above a cupboard for storing food. Cf. the illustration in Falanga 1981, 60 tav. 9.

5. Besides the passages quoted above, the piece is also mentioned in: Fuhrmann 1940, 504-510 (who regards the cupboard as profane); Maiuri 1940, 382-383; Maiuri 1940A, 172-173 and 179; De Bruyne 1944, 305-306; Maiuri 1958, 237 and fig. 186; Maiuri 1958A, 332-334; Kusch 1960, 34 and Abb. 34; Baldi 1964, 38-39 and fig. 7; Maiuri 1964, 47; Brion 1965, 86 fig. 38; Orr 1978, 1585; Zefiro 1979, 58 and 59 fig. 10; Orr 1980, 130 and 197 no. 22 (who classifies the piece as a 'lararium' in his Corpus B); Falanga 1981, 8, 51, 83 and 84; Baldi 1983, 74 and tav. IX; Falanga 1983, 72, 76-77 and 83 and figs. 1-2; Gore 1984, 592; Deiss 1985, 94 and fig. on p. 96; De Kind 1990, 198 and 201-202.
- The cupboard is briefly mentioned in most of the articles which deal with the 'cross'. All these articles are included in the bibliography given by Falanga 1981.

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1. WOODEN CUPBOARD, fig. 166.
2. Find spot and date unknown.
- 3.1. Magazzino Archeologico, Herculaneum. Inv. E 3151 (until 1987 the piece had been stored for a long time in a storeroom in the Area Sacra, *sacellum* A; before this it had been kept in a store on the site of the present Magazzino Archeologico).
- 3.2. Wooden cupboard which in terms of size and form closely resembles the small bedside cupboards which were common in Europe in the first half of the 20th century. The piece can be broadly divided into two sections. The bottom section has two doors and inside is divided into two halves by a shelf. The top section consists of a drawer separated from the doors by a rail.

The front, back and two sides of the cupboard are held between four corner uprights. The bottom is provided by quite a thick base board which has crumbled along the edges. In the reconstruction the base board sits on the plexiglass frame and is no longer joined to any of the walls of the cupboard, making it impossible to see how it was originally attached.

Between the uprights the front is constructed from the following elements (from the the

bottom):

- a flat rail, flush with the uprights;
- two inset stiles, parallel to the uprights, between which stand the doors;
- a flat rail, flush with the uprights, which separates the doors from the drawer above;
- a drawer;
- the edge of the board which forms the top of the piece.

Bone hinges were originally mounted on the inside of the stiles, from which the doors hinged outwards. There is a vertical notch in each of the stiles to accommodate the hinge. Only one of the segments in the reconstructed hinge band is authentic (see also code below 3.4.2). This is an end piece and thus plausibly repositioned at the bottom of the left-hand hinge. At the bottom it has two decorative horizontal lines which probably once held wax (see § 4.7.2). It is made of bone while the reconstructed segments are wooden. The original segments were alternately fixed to the stiles and the adjoining door.

The construction of the doors corresponds to the pattern which is very common in Herculaneum: a framing of two stiles and three rails surrounds a pair of panels, the lower of which is about twice the height of the one above. The edges of the framing facing into the panels carry a moulding which is mitred into the corners. The panels were probably loosely inserted.

On the front of the lower panel of the right-hand door there are two metal knobs. Severe oxidization prevents us from discovering their original form. Below these a square bronze plate (with an excentric oval hole) is mounted on the wood of the door with four small nails. These metal elements should be regarded as door fittings and may have formed part of a construction to bolt the doors.

Only the front of the drawer has survived. In the middle there is a round metal knob with which the drawer could be opened. We do not know how the rest of the drawer was constructed.

The two sides are of identical construction. Neither are completely flat at the bottom, suggesting that there may here have been some kind of joint to the cupboard's vanished base. Both sides are now slightly displaced from their original position. The rails and the central stiles would once have been flush with the corner uprights, but are now slightly projecting to allow space for the modern plexiglass frame upon which the cupboard is mounted. The description which follows is based on the better preserved left-hand side. Between the corner uprights run two rails, one of them at two thirds of the height, the other right at the top. Between the centre of the lower rail and the bottom runs a vertical stile which divides the area below the rail into two equal parts. A panel runs behind the stile and rails, creating the effect of three panels: two tall and narrow surfaces below the rail and one shallow, broad surface above it. The rails, stile and uprights seem to be joined with mortise-and-tenon joints and may have been glued to the panel.

The other surviving elements of the piece are the thickish base board, the thinner top board and a shelf which divided the cupboard section into two. The shelf was supported at each end by a batten attached to the side wall of the cupboard. All three have crumbled along the edges and are no longer attached to the body of the piece. Thus again we cannot come to any conclusion about the joints originally used. The lower pair of rails in the sides would have served to strengthen the construction which carried the drawer.

3.3.1. Wood, carbonized.

3.3.3. A pair of knobs, whose form is hidden under a layer of oxidization, are fitted to the front of the right-hand door. A square bronze plate, mounted on the right-hand door with four iron nails, is fully visible, as is a round bronze knob fitted in the middle of the front of the drawer. Of the doors' hinges only the bottom segment of the left-hand door is preserved. This is made of bone, which makes one suspect that both hinges were originally made entirely of bone.

3.3.4. The original joints were cut by a modern supporting frame (see below code 3.4.2.). The

framing of the sides was probably held together by mortise-and-tenon joints. It is not possible to discover how the top and base boards were attached to the sides. The doors are each assembled from two panels enclosed in a framing. The doors were hung on bone hinges. Budetta (in: Budetta/Pagano 1988, 29) claims that dovetail joints can be identified in the drawer, but this is not in fact the case.

3.4.1. Missing elements:

- the back;
- fragments of the four corner uprights. Less than half of the right-hand rear upright is preserved and this in three fragments.
- the sides, back and bottom of the drawer;
- small fragments in the other panels of the cupboard;
- fragments along the edges of the base board, shelf and top; the base board has also crumbled in both front corners and the front left-hand corner of the shelf is missing.
- all but one of the hinge segments.
- the complete top and middle rails of the left-hand door, plus a fragment of the top right-hand corner of this door.

The whole piece must originally have had a base, the form and size of which are not known. The uprights were probably longer in the corners and incorporated into the base. The back may have been constructed like the sides with stiles and rails enclosing a panel.

3.4.2. In 1987, when the cupboard was retrieved, it was in a very poor condition. The damp in its previous storeroom had totally penetrated the antique wood. The various fragments in which the piece was found were mounted on a wooden frame dating from the time of the discovery. Several sections appear to have been patched in the modern period, notably the doors and the right-hand stile along the hinge. In this last there are places where gaps in the antique material have definitely been filled in. However, even in the modern additions the wood is carbonized, suggesting that antique wood has been used.

Early in 1988 the old frame was replaced by a plexiglass version. The layer of paraffin-wax was also largely removed, making many details visible once more. Both doors were refitted upside down and the wooden hinge segments added during the original reconstruction were retained. In this state the cupboard was pictured in the catalogue of the exhibition held in the Castel Sant'Angelo in 1988 (Budetta/Pagano 1988, 28).

In 1989, following our advice, a new reconstruction was made with reference to the other doors found in Herculaneum. This required the doors to be turned back again. Further, the two side panels to be slightly brought in. Originally only the stiles and rails would have been flush, and in the 1988 reconstruction the panels had been placed too far out. Lastly the hinges were fixed to the rails at the top and the bottom with pegs which ran sideways through the segments.

On the right-hand side the central stile crosses over the bottom rail, which it does not on the left-hand side. This may be due to a faulty reconstruction.

3.5.1. H. 525 mm., L. 462 mm., D. ca. 370 mm.

3.5.2.

BASE BOARD

L. max. pres.: 390 mm.
D. max. pres.: 348 mm.
Thickness: 15 mm.

FRONT

construction without doors (from below):
rail: 0-50 mm.;
shelf: 180-187 mm.;
rail: 385-435 mm.;
drawer: 435-510 mm.;
drawer knob: 455-478 mm.;

top: 515-525 mm.
(from left to right):
upright: 0-56 mm.;
stile beside left-hand hinge: 56-95 mm.;
notch in stile: 85-91 mm.;
stile beside right-hand hinge: 367-400 mm.;
notch in stile: 367-373 mm.;
upright: 400-462 mm.;
L. drawer: 65-395 mm.
drawer knob: 225-245 mm.
Thickness drawer front: 11 mm.
Mouldings between uprights and doors:

Thickness max.: 12 mm.
Thickness in notch: 5 mm.

DOORS (taken from right-hand door only).

Construction (from right to left):

hinge: 0-22 mm.;
stile: 22-40 mm.;
moulding: 40-47 mm.;
panel: 47-104 mm.;
moulding: 104-111 mm.;
stile: 111-140 mm.

(from below):

rail: 0-38 mm.;
moulding: 38-45 mm.;
panel: 45-170 mm.;
moulding: 170-178 mm.;
rail: 178-211 mm.;
moulding: 211-218 mm.;
panel: 218-268 mm.;
moulding: 268-275 mm.;
rail: 275-315 mm.

Position metal elements (from right):

48-72 mm. (u.);
43-65 mm. (t.);
80-103 mm. (t.).

Position metal elements (from below):

square plate (u.): 102-124 mm.;
knob (u.): 124-145 mm.;
knob (t./l.): 155-172 mm.;
knob (t./r.): 105-107 mm.

HINGE

H. preserved segment: 72 mm.

Diam. preserved segment: 21 mm.

decorative lines: at 7 and 10 mm. (seen from below).

H. reconstructed segments: 25 mm.

Diam. reconstructed segments: 21 mm.

Diam. modern pin in segments: 5 mm.

SIDES

Construction left-hand side (from below):

panel: 0-318 mm. (thickness 14 mm.);
rail: 318-350 mm. (thickness 18 mm.);
panel: 350-465 mm.; (thickness 14 mm.);
rail: 465-515 mm.

Construction left-hand side (from left to right):

stile: 0-45 mm.;
panel: 45-155 mm.;
stile: 155-204 mm.;
panel: 204-312 mm.;
stile: 312-372 mm.

Construction right-hand side (from below):

panel: 0-320 mm.;
rail: 320-350 mm.;
panel: 350-470 mm.;
rail: 470-511 mm.

Construction right-hand side (from left to right):

stile: 0-60 mm.;
panel: 60-170 mm.;
stile: 170-210 mm.;
panel: 210-328 mm.;
stile: 328-378 mm.

TOP

Thickness: 10 mm.

L. max. pres.: 420 mm.

W. max. pres.: 305 mm.

SHELF

L. max. pres.: 416 mm.

D. max. pres.: 340 mm.

5. Budetta/Pagano 1988, 28-29, cat.nr. 5; Mastroberto 1992, 147.

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1. WOODEN CHEST, figs. 167-171

2. The chest is included in the inventory of the Magazzino Archeologico at Herculaneum. All information included here regarding external circumstances is taken from the index card (cf. appendix 1).

- 2.1.1. The *Decumanus Maximus*.

- 2.1.3. North-east side.

- 2.2. 1-8-1961.

- 2.3. The chest contained flour and remnants of textile.

- 3.1. Magazzino Archeologico, Herculaneum. Inv. E 2323.

- 3.2. A rectangular chest rests upon two supports which run the full width of the piece. A base board about which no details are known, rests on these supports. On the edges of the board stand four vertical boards which form the walls of the chest. These are held together with lock corners, which enable us to clearly observe the thickness of the walls.

The top of the chest is closed by a lid. The front and both sides are edged by battens which project a little beyond the walls. The battens stop short of the back of the chest at the sides. The original construction can still be seen in the right-hand batten. Part of the left-hand batten is missing at this point.

A notch is cut along the entire length of the lid at the back. This held a wooden hinge which projected slightly beyond the back of the chest. The top of the hinge lay slightly below the top surface of the lid. The hinge was constructed from cylindrical segments, seven of which have more or less survived. A fragment of one of these sits in the left-hand rear corner, while on the right-hand side the second to the sixth segment are still completely intact. A small piece of the adjoining seventh segment is also preserved. It is clear from the surviving segments how the lid hinged. The various segments were alternately fixed to the lid and the back of the chest using long cylindrical pegs, one of which is partly preserved in the seventh segment from the right. This preserved pin is attached to the lid. Moreover, the flat ends of the cylindrical segments were alternately provided with holes and pins which ensured that the segments stayed in place and allowed the lid to turn in relation to the back of the chest. In so far as can be gathered from the fragments, each of the hinge segments had a hole at one end and a pin at the other.

Seven loose fragments are preserved with the chest, six of which were part of the lid. The original position of the remaining fragment is not known.

- 3.3.1. Wood, carbonized. One sample taken from the back has been analysed: *Acer*.
- 3.3.4. We cannot see how the walls are attached to the base. The most we can say with any certainty is that they stand on the base. The walls are held together with lock corners. The lid could turn in relation to the back of the chest by means of a wooden hinge (for the operation of such a hinge see § 4.7.2). The projecting battens were probably glued to the edge of the lid without extra pegs.
- 3.4.1 The edges have crumbled away in many places. Six of the seven loose fragments which are preserved with the chest appear to have been part of the lid, while the seventh cannot be attributed (perhaps it was part of the base?). The underneath of the chest cannot be studied. The base is probably only partly preserved. The contents, which are known, were removed after discovery through the base, leaving the walls and lid unaffected. More than two-thirds of the hinge is missing.
- 3.4.2 A modern wooden board has been fitted between the supports and the base of the chest. Similar pieces have been attached to the inside of the walls and under the lid. During the excavation the chest was opened from the bottom, which made it possible to reinforce the other surfaces from underneath. The wood has been treated with a thick layer of paraffin-wax mixed with carbon powder. In 1989 a start was made on the removal of the paraffin-wax layer, making details more visible. The supports under the chest, which are not symmetrically positioned, appear to have been inaccurately replaced during the reconstruction.
- 3.5.1. H. 477 mm. (excl. 3 mm. modern board between supports and base), L. 1035 mm., W. 627 mm.

3.5.2.

SUPPORTS
H.: 27 mm.
L.: 597 mm.

BASE BOARD
H.: 30 mm.
L.: 980 mm.

W.: 597 mm.

Position supports under chest (from left to right):

1. 90-180 mm. (f.) and 95-170 mm. (b.);
2. 805-876 mm. (f.) and 800-885 mm. (b.).

WALLS

L. front and back walls: 980 mm.

L. side walls: 597 mm.

Thickness walls: 22 mm.

LID

H.: 22 mm.

L.: 1035 mm.

W.: 624 mm.

H. battens around edge of lid: 27 mm.

End of batten from back (l.) 150 mm.

End of batten from back (r.) 40 mm.

HINGE

Notch for hinge: H. 8 mm.; W. 15 mm.

Position of hinge segments from right-hand rear corner:

2. 90-145 mm.;

3. 145-200 mm.;

4. 200-255 mm.;

5. 255-315 mm.;

6. 315-370 mm.;

7. 375-430 mm. (fragment);

8. 945-960 mm. (fragment).

L. hinge segments: max. 60 mm.

Diam. hinge segments: 26 mm.

Diam. pin in segment 7: 5 mm.

Projection hinge beyond back: 3 mm.

5. Mols 1993, 492 and 496 tav. CXI, 2.

APPENDIX 1

ARCHIVE MATERIAL AND PUBLICATIONS (1740-1982)

There follows a chronological survey of the written sources for the wooden furniture and fragments thereof found in Herculaneum. It covers descriptions of all known pieces, whether or not they are still preserved. Part is taken from documents kept in the archives of the Soprintendenza at Naples (indicated as: Napoli, archivio storico). The oldest of these documents were partially published by Ruggiero (1885) and Pannuti (1983). These can be now supplemented with unpublished archive material. The relevant passages from the 19th and 20th century excavation reports are given in their entirety, so that an impression can be gained of the large quantity of furniture which can no longer be studied. Where Ruggiero has ended descriptions from the 19th century with the entry '(copia)' we have always returned to the original. This explains any discrepancies in typography and formulation. As far as possible the material is organised chronologically. Besides the general survey of finds of wooden furniture, there are two separate surveys included; the first covers loose finds of bone hinge segments, the second gives passages from lists which refer to the dispatch of finds to the Museo Nazionale in Naples. It is not known from which houses the 18th century finds come.

To denote the site of a find in the 19th century excavations Ruggiero uses figures which refer to his tav. XII, which is reproduced here in fig. 172.

Unless otherwise indicated, the 20th century data are taken from the *Giornali dei Nuovi Scavi* for Herculaneum. In their description the *Giornali* always give the object found, the find spot and the find date. We have not been able to trace the excavation reports for the years 1931 and 1932. For this period all we have is the information given in some of the *Descrizioni di Ambienti*, the inventory of the Magazzino Archeologico at Herculaneum and any published observations. The *Descrizioni di Ambienti* are descriptions which were made only after a house had been completely excavated. For the 20th century excavations we aim to give, in the first line, the modern name of the house concerned together with the room number as defined by Maiuri (1958). For a plan of the Casa del Colonnato Tuscanico, please refer to the publication of the house by G. Cerulli Irelli (1974, fig. 1). When known, the inventory numbers of the finds are given between brackets (e.g.: E 256). Whenever finds made in the vicinity of a piece of furniture are mentioned, only the type of find, with the relevant inventory number from the Magazzino Archeologico in Herculaneum, is given. The description in the excavation reports is not included. In a number of cases of 20th century finds, the description from the inventory list (*libro dei trovamenti*) in the Magazzino Archeologico in Herculaneum is given. This is indicated as: *Libr. trov.*, followed by the inventory number and the description. There is sometimes extra information provided on the photo archive filing cards. Wherever this has been used it is preceded by the word *Scheda* and the inventory number. For finds with inventory numbers between E 2546 and E 2812, the find spot and date are usually not known. These were presumably only added to the inventory during the 1960's. Finally, several items are included for which there is only an unnumbered filing card in the Magazzino Archeologico.

Passages which are illegible in the handwritten reports are indicated thus: {...}. Sometimes a few letters are legible, in which case they are given even though the complete word is unclear. Occasionally the present writer's remarks are included and appear between square brackets: [...]. Irrelevant clauses are replaced by three dots: ...

EIGHTEENTH CENTURY

Bed legs: (28 April 1740) 'uatro pedazos torneados de metal, que parecen pies de alguna silla, ó messa, y tiene clabadas diversas barritas, tambien de metal, en sus remates, por entrambos lados' (Pannuti 1983, 187).

Bed leg: (12 September 1740) 'diversos pedacillos torneados de madera' (Pannuti 1983, 194).

Wooden chest with bronze appliqué: (22 February 1741) 'dos figuras de metal de medios cuerpos, medio palmo de alto, cada una, enteram.^{te} sanas: la una representa un muchacho coronado de vites, con alas abiertas, y tiene la mano derecha al pecho, embuelta en una banda, que le tiene por el hombro; la otra representa un viejo con barba, y las orejas muy largas, y tiene igualm.^{te} un paño que le viene del hombro derecho, y le cubre el cuello, hasta cerca la boca, observandose desnudo el brazo derecho cuya mano está apoyada al hombro yzquierdo; así mismo se han hallado otros pedazos pequeños de metal' ... En 23 del dicho: otras seis figuras de metal, las dos de ellas, de medio palmo de alto, las otras tres, de quatro onzas, cada una; y la otra mas pequeña, todas de medio cuerpo, y de perfecta construccion, estando las quatro enteram.^{te} sanas: la primera representa muger coronada de racimos de uba, y en la mano derecha, que comparece sola, sobre el pecho, tiene una granada: otra representa un Satyro con cuernos, y orejas muy largas, y tiene una sierpe assida por la cola, con la mano derecha, y tiene otra devajo del brazo izquierdo; otra representa personage viejo con barba, coronado de vites; otra representa muger coronada de ramos, con un paño, que le viene del hombro derecho, y le cubre el pecho; y las otras dos, que están algo maltratadas, representan hombres, coronados de ramos; y así mismo se han hallado otros diversos pedazos de metal' (Pannuti 1983, 203-204); (23 February 1741) 'Un cajon de metal cerrado, <...>; y habiéndole hecho descubrir en mi presencia, se ha encontrado que el dicho cajon era de madera cerca 5 pal. de largo; el qual por el frente estaba cubierto de ojas de metal muy delgadas, y consumida la madera de forma que al tiempo de moverle se ha desecho toda en tierra, no habiéndose hallado dentro de él la más minima cosa; y solo de los adornos de metal que tenia el frente se han sacado á mas de las 2 figuras que participé ayer á V.E. que eran del dicho cajon, otras 6 figuras (con otros diversas pedazos de metal); los 2 de ellas son medio palmo de altas, otras 3 son de 4 on. cada una y la otra es mas pequeña; todas de medio cuerpo y bacantes por atras; las 4 interam. sanas y de muy perfecta construccion; y la primera repre. cabeza de muyer coronada de razimos de uba y en la mano derecha que comparece solo sobre el pecho, tiene una granada (Museo Nazionale n°. 1542 - De' bronzi di Ercol. ecc., tom. I, pag. 33); la otra parece que repre. á un sátiro con hastas y orejas muy largas y tiene en la mano derecha asida una sierpe per la cola, teniendo otra debajo del brazo izquierdo (Museo Nazionale n°. 5302 - De' bronzi di Ercol. ecc., tom. I, pag. 29); la otra representa cabeza de personaje viejo con barbas, coronada igualmente de vites, y solo se ben en ella los hombros con parte del pecho (De' bronzi di Ercol., tom. I, pag. 11?); la otra repre. cabeza de mujer coronada de ramos, obserbándose solo el pecho cubierto de un paño que le viene del hombro derecho. Y las otras dos que estan algo consumidas, la una rota, y son las más pequeñas, tienes aspecto de hombres coronados igualm. de ramos. Cuyas 6 figuras con otros pedazos de metal que se han podido recoger del adorno del citado cajon se han llebado al Palacio dicho de Caramánica y se han puesto con lo demás che se halló ayer... Alcubiere' (Ruggiero 1885, 67-68); (25 February 1741) 'otras dos figuras de metal, quatro onzas de alto, cada una, de medio cuerpo: la una representa personage viejo con barba larga, coronado de ramos, cuya cabeza es muy perfecta, y la otra representa un perro hechado en tierra, apoyado la caverza sobre las dos manos' (Pannuti 1983, 204); 'Portici y febrero 25 de 1741. En este dia solo puedo participar á V.E. la not. de haberse hallado en las escab. subterra. á Resina dos figuras de metal de 4 on. de alto cada una, las quales todavia son de los adornos que tenia el cajon que he dado cuenta á V.E. en los dias antecedentes; y la una repre. medio cuerpo de un hombre viejo con barba large coronado de ramos, cuya cabeza me parece muy perfecta; y la otra repre. un perro echado en tierra apoyando la cabeza sobre las dos manos' (Ruggiero 1885, 68); (1 March 1741) '10 figuras de metal' (Ruggiero 1885, 69); (4 March 1741) '...remito en una cajita á las manos de V.E., como y tambien... 4 figuras de metal de las 10 que se han encontrado igualm., quedando en el R. Palacio dicho de Caramánica las otras 6 figuras, de las quales las 2 son semejantes á las dos más grandes que ban en la cajita, y las otras son compañeras á las 2 más pequeñas, siendo las mejores las 4 que ban en la referida caja' (Ruggiero 1885, 69).

Cupboard with metal fittings: (17 April 1745) 'algunos vasos de bronze, y algunas figuras pequeñas de marmol, lo que estava en un armario de madera, quemada, guarnecido de metal' (Pannuti 1983, 217).

Chest: (30 April 1745) 'un pequeño cofre quemado, en el qual havia veynte quatro, o veynte cinco piezas de plata, assí de tazas para beber, como de pequeñas bacias; pequeños platos; y otras cosas de esta naturaleza, con quatro cucharas de plata' (Pannuti 1983, 217).

Metal fittings for chest: (22 October 1752) 'tres anillos, y una manilla, todo de guarnicion de un estipo, ygualmente de metal' (Pannuti 1983, 312).

Metal fittings for chest: (21 August 1756) '(En Resina, en las grutas de debajo la maseria de Bisogno): doze pedacitos de guarnicion de estipo, tambien de metal' (Pannuti 1983, 376); 'En la misma maseria (sc. De Bisogno) al conducto de la columnada, donde tambien se ha encontrado una mesa ó tabla de 2 por 1 ½ pal. de portasanta pero bellissima y otro pedazo de vermillo antiguo de 12 por 6 on., puesto al R. jardin, y de bronze un medio gozne y doze pedacitos de guarnicion de estipo y catenillo y dos pedacillos con un poco de madera y un poco de panimiento conservado á uso como los papiros; ademas dos goznes de yerro. Weber' (Ruggiero 1885, 200); (21 August 1756) 'y se han encontrado un pedazo de mármol portasanta de 2 pal. por 1 pal. y ½, ... Ademas se ha encontrado ... un medio gozne de metal con ciertos fragmentos de una zerradura y otros de cadenilla de metal con un anillito y un ganchito y con otros fragmentos de gropa quemada; lo que se ha dado á Paderni con dos goznes de yerro' (Ruggiero 1885, 201).

Bed legs: (28 August 1756) 'En las grutas de devajo el bosque de S.^a Agustin, se encontró un medio gozne y otra pieza redonda, de metal, la qual se supusó pertenecia á una silla, que se encontró, de madera, convertida en tierra' (Pannuti 1983, 377). 'Bajo el bosque de S. Augustin se ha encontrado un medio gozne y un redondo que es guarnicion de una silla que era de madera' (Ruggiero 1885, 202).

Turned bed legs?: (8 October 1756) 'N^o. 3 pezzi di legno tornito, ma divenuto carbone, trov. come sopra [=Masseria De Bisogno]. Paderni' (Ruggiero 1885, 205).

Chest/cupboard fittings: (22 December 1756) 'Picciolo stuccio senza coverchio di legno' (Ruggiero 1885, 211); (23 December 1756) '... Un scudetto tondo ove vi è stato l'anello per uso di maniglia di stipo ... Un astuccio di legno impetrato ma rotto' (Ruggiero 1885, 211).

Bed legs: (26 May 1758) 'Da uno de' cavatori ricevei una pedagna di un lettisternio, un mezzo frontizio; il tutto di rame. Una zappa di ferro molto patita, trovato sotto la Masseria di Bisogno. E più ricevei altra pedagna compagna alla di sopra scritta, ma rotta e mancante, trov. nel detto sito. E più altra pedagna come sopra in minuti pezzi' (Ruggiero 1885, 262). (27 May 1758) '... y se han encontrado una zapa de yerro ... Cerca la Madona se siguen dos grutas y se han encontrado tres piezas de metal à modo de pedaños de guarnicion de 9 on. largas abajo, de 5 on. altas, de 4 on. anchas y de 2 on. y ½ de diametro arriva con un ahujero encima, pero la una solamente sana y las dos rotas en diferentes pedazos ... Weber' (Ruggiero 1885, 262).

Bed leg: (14 August 1758) 'Ricevei da uno de cavatori un piede di lettisternio, trov. sotto la Masseria de Bisogno' (Ruggiero 1885, 268).

Chest/cupboard fittings: (28 August 1759) 'Da uno de' cavatori ricevei una maniglia di stipo quale forma un anello con la sua borchia lavorata al torno, trov. sotto il bosco di S. Ag.' (Ruggiero 1885, 288); (1 September 1759) 'Debajo el bosque de S. Agustin ...; y se han encontrado una piastra con una anilla de metal asida de guarnicion' (Ruggiero 1885, 288).

Veneer for a chest with gilding: (13 October 1759) 'Da uno de' sud. ricevei ..., diversi piccioli frag. di sottile legname che ha servito l'impellicatura' (Ruggiero 1885, 290); 'Al tiempo que se estava escribiendo esta carta he sido llamado de las grutas bajo la maseria de Bisogno, á donde he observado que en alguna parte del terreno que si iba escavando comparecia algun poco de oro atacado á la tierra, y despues de examinando, he visto que alli havia havido un mueble ó cornisa de madera dorada; cuya madera haviendo sido

enteram. consumida del fuego, pues solo permanece algun poco de carbon y ceniza, la doradura quedó pegada á la tierra, y se han recogido algunos pedacillos del mismo terreno con el oro y otros muy consumidos que parecen de abólio y se han llevado al Museo, habiendo dispuesto se continúe á escabar allí con todo el may. cuidado para ver que otra cosa promete este principio. Alcubiere' (Ruggiero 1885, 290); (20 October 1759) 'En Resina, debajo la maceria de Bisofio se continua una gruta en el Templo del Teseo y otra en otra Templo pequeño, en donde se han encontrado ciertos pedacillos de madera fina de guarnicion de algun estipo, medio gozne de yerro y medio de metal y ciertos pedazos de terreno, esculpido en el algo del adorno de la madera del estipo con algunas átomos de oro; y allí immediato se ha encontrado ... Weber' (Ruggiero 1885, 291).

Chest/cupboard fittings: (20 November 1759) 'E più una maniglia di stipo la quale forma un anello, fermata ad una borchia di metallo tornito, trov. sotto la masseria di Bisogno' (Ruggiero 1885, 294).

Bed leg: (5 December 1759) 'Da uno de' sud. ricevei un frag. appartenente ad una sedia di metallo, trov. come sopra. Mass. di Bis.' (Ruggiero 1885, 298).

Bed appliqué: (7 December 1759) 'Y la ultima pieza parece guarnicion de una silla.' 'Y otra pieza de 5 on. alta y una onza y media en quadro, vacante por dentro, y á una parte la boca redonda de 2 on. de diámetro, y debayo del circulo de dicha boca salen dos listones de 2 on. ½ cadauno largo y de una onza ancho' (Ruggiero 1885, 298).

Chest/cupboard fittings: (30 May 1760) 'Nº. 4 maniglie di metallo di armari, una de' quali è sola conservata (Mass. di Bis.)' (Ruggiero 1885, 312).

Chest/cupboard fittings: (12 July 1760) 'E più ricevei una maniglia di stipo ... di rame' (Ruggiero 1885, 315).

Bed leg in metal and wood?: (6 August 1760) 'Frag. di metallo et altro frag. di legname tornito (mass. di Bisogno)' (Ruggiero 1885, 316).

Bed leg?: (9 August 1760) '..., un pié ó pumo de madera torneado de 4 on. y ½ de diámetro y 3 on. alto. (Mass. di Bisogno) Weber' (Ruggiero 1885, 316).

Chest/cupboard fittings: (3 October 1760) 'Da uno de sud. ricevei un anello con piastra di rame, quale serviva di maniglia a stipi. (Mass. di Bisogno)' (Ruggiero 1885, 320).

Bed appliqué?: (11 October 1760) 'Nº. 2 frag. di una sedia; ... di metallo' (Ruggiero 1885, 324).

Fragments of bed?: (17 October 1760) 'Da uno de' sud. cavatori ricevei ...; alcuni pochi frag. di una sedia di legno carbone. Mass. di Bis.' (Ruggiero 1885, 325).

Bed leg?: (probably 18 October 1760) '... y se han encontrado un gancho de metal de 4 on. y ½ y cinco pedacillos de madera torneada, cosa de guarnicion. (mac. de Bis.) Weber' (Ruggiero 1885, 326).

Chest/cupboard lock: (9 May 1761) 'Una cerradurita de estipo. Mass. di Bis. Weber.' (Ruggiero 1885, 351).

Bed appliqué?: (19 June 1761) 'Nº. 4 frammenti di fascie appartenenti a sedie, il tutto di metallo ..., trov. sotto la masseria di Bisogno' (Ruggiero 1885, 359); (20 June 1761) 'En Resina, á Bisofio, (la gruta de la calle basolada hacia la torre) (un concola grande en muchos pedazos rota) y quatro pedazos de folleta como cornizes ó guarnicion de alguna tabla, que unidos son 4 pal. y 9 on. Weber' (Ruggiero 1885, 360).

Bed appliqué?: (12 March 1762) 'E più due frag. di fascie di sedie; in una di queste vi è un arabesco, trov. sotto la masseria di Bisogno' (Ruggiero 1885, 384).

Bed appliqué?: (Portici 13 March 1762) 'En Resina, mas. de Bisofio. Se ha encontrado dos planchetas de metal de guarnicion de una tabla, la una de on. 14, ancha on. 2 ½, la otra de on. 14, ancha de on 2 ½. Weber' (Ruggiero 1885, 384).

Bed legs: (probably 27 March 1762) '... otras dos (sc. grutas) por las habitaciones fuera del Teatro, y se han encontrado un pié de metal como de una estatuita de 3 on. largo y 2 on. alto, bacante por dentro como si fuese guarnicion de alguna cosa de madera. Weber' (Ruggiero 1885, 384).

Bed leg: (2 September 1763) 'Un frag. di un piede di sedia o sia lettisternio, longo on. 14' (Ruggiero 1885, 422).

Bed legs: (3 September 1763) '... (Al vicolo de mar bajo el cortil de Spineta Prior y donde ce hacen los palares bajo las casas lesionadas) y otro tubo de metal de 14 on. largo, á un lado de 3 on. de diám. y al otro de 2 on.; éste tubo es un pié ó pierna ó columneta que sustentava una silla de bronce, de la qual tenemos la compañera al Museo come me hizo ver D. Camillo ... Weber' (Ruggiero 1885, 422); (5 September 1763) '... La seconda colonnetta di sedia o sia lettisternio che è servito per uno dei 4 piedi. ... di metallo trovato alla nova rampe di Resina, loco de 'pilastri' (Ruggiero 1885, 422); (10 September 1763) '... En el cortil de Spineta atrás del consabido Templo, endonde se entra por una rampa nueva, se ha encontrado otro pié ó columneta de silla semejante al de la semana pasada, de 14 on. largo y diam. arriva 3 on. y abajo 2, ... de metal' (Ruggiero 1885, 423); (14 September 1763) 'Da uno de' cavatori ricevei la terza colonnetta di metallo appartenente ad uno de' 4 piede di qualche sedia o sia lettisternio sacro' (Ruggiero 1885, 424); (14 September 1763) '... y á las casas lesionadas y cortil Spineto otra columneta ó pié de la silla de bronce semejante á los otros dos; falta uno de buscar y la silla ... Weber' (Ruggiero 1885, 424); (17 September 1763) 'Vico de mar, cerca las casas lesionadas y fabricas de los pilares con entrar por una rampa nueva (en el territorio de Andrea Escoñamillo) se ha encontrado ademas del pié della silla de que he dado parte en 14 del cor ... Weber' (Ruggiero 1885, 425); (14 September 1763) '... ademas el dia 22 un pié ó columneta de metal de la silla correspondente á los otros tres que se encontraron las semanas pasadas, alto 14 on., diám. abayo 4 on. y arriva dos y medio (se duda que fuesse de otra silla variando que tiene una tenuta ó punta que no tenian las otras); ... Weber' (Ruggiero 1885, 425).
(22 September 1763) '... 'Da uno de' sud. ricevei la quarta colonnetta della sedia o sia lettisternio et un frag. di anello, il tutto di metallo, trov. come sopra' (Ruggiero 1885, 425).

Bed leg: (26 October 1764) 'Un frag. di qualche sedia et altro picciolo frag. di piastra; il tutto di metallo' (Ruggiero 1885, 450).

Chest/cupboard fittings: (8 December 1764) '... si è rinvenuto in questa settimana nel solo scavo presso a PP. Gesuiti, ... Un anello per uso di maniglia di armari ... Paderni' (Ruggiero 1885, 452).

Parts of beds: Bonucci 1835, 31, concerning the Villa dei Papiri: 'Nel 1774 si fece un nuovo saggio di scavamento in quest'abitazione, e vi si rinvennero fragli altri oggetti il famoso lettisternio, ed il bisellio ornati di bassirilievi d'animali, e d'intarsiature d'argento.' See also Bonucci 1835, 59, where he describes the collection of the Real Museo Borbonico in Naples: 'Galleria dei bronzi minuti, stanza terza: ... vi s'incontrano il lettisternio, ed il bisellio rinvenuto nella casa di campagna.'

Table leg: (7 December 1776) '... Nel Teatro di Ercolano ho fatto levare della terra da una grotta già fatta; e fra la terra stessa mossa si è trovato un piede di qualche mobile di legno intagliato con una zampa di leone; ma oltre essere questo un carbone, è rotto in diversi pezzi. Tutto si è mandato in R. Museo à Paderni. La Vega' (Ruggiero 1885, 518).

Fragment table leg?: (12 April 1777) '... P.S. Nel cavarsi il fosso del fondamento da farsi sotto la casa di Matteo Scognamiglio in Resina si è trovato ... Di legno, ... porcione, secondo pare, di una testa intagliata pure nel legno. La Vega' (Ruggiero 1885, 518-519).

Parts of beds: Boube-Piccot (1960, 280) mentions a number of examples: '43) Théâtre d'Herculanum.

Nombreux éléments de jambages de lits. Nombreuses bandes décoratives appartenant sans doute à plusieurs lits et remontés de façon erronée en bisellium. Garnitures latérales d'accoudoir et leurs appliques: deux protomés de mules bachiques, Silène, Gorgone'. Boube-Piccot relies on Cagnat-Chapot 1920, 416 fig. 610; DS IV 2, 1551, fig. 6679.

Hinge segments from storage furniture

Amongst the loose finds of fragments of storage furniture there are a lot of bone hinge segments which in the period of the earliest excavations were often identified as flutes. This was already observed by Ruggiero (1885, 40, nota 1): 'Questi ossi di varia lunghezza e bucati di fianco, frequentissimi nelle case antiche, son quasi tutti cerniere; essendosi trovati nei successivi scavi di Ercolano e Pompei diverse casse di legno (come al solito di carbone) congiunte a questo modo coi loro coperchi.' In the 18th century c 200 segments were found, the find context not being given. For these pieces we therefore give only the date, the number of segments and the references. In the archives the segments are generally referred to as 'pedazo(s) de flauta de gues(s)o' or 'un frammento di tibia d'osso'.

- 8 and 11 August 1739, (4): Pannuti 1983, 177; Ruggiero 1885, 49.
- 17 August 1739, (2): Pannuti 1983, 177; Ruggiero 1885, 40.
- 6 October 1739, (2): Pannuti 1983, 179.
- 14 October 1739, (1): Pannuti 1983, 180; Ruggiero 1885, 52.
- 23 April 1740, (1): Pannuti 1983, 187.
- 28 April 1740, (4): Pannuti 1983, 187.
- 8 June 1740, (7): Pannuti 1983, 190.
- 13 June 1740, (10): Pannuti 1983, 190.
- 14 June 1740, (1): Pannuti 1983, 190.
- 15 June 1740, (6): Pannuti 1983, 191.
- 1 September 1740, (unknown quantity): Pannuti 1983, 193.
- 20 October 1740, (3): Pannuti 1983, 197.
- 27 October 1740, (7): Pannuti 1983, 198.
- 23 November 1740, (3): Pannuti 1983, 199.
- 24 November 1740, (1): Pannuti 1983, 199.
- 3 December 1740, (2): Pannuti 1983, 199.
- 8 February 1741, (1): Pannuti 1983, 203; Ruggiero 1885, 65.
- 13 March 1741, (3): Pannuti 1983, 204.
- 28 April 1741, (unknown quantity): Pannuti 1983, 206; Ruggiero 1885, 76.
- 29 April 1741, (8): Pannuti 1983, 207; Ruggiero 1885, 76.
- 4 October 1741, (4): Pannuti 1983, 220.
- 25 October 1741, (1): Pannuti 1983, 222.
- 6 November 1745, (3): Pannuti 1983, 223.
- 13 November 1745, (2): Pannuti 1983, 224.
- 8 January 1741, (13): Pannuti 1983, 227.
- 10 January 1746, (9): Pannuti 1983, 227.
- 22 April 1746, (6): Pannuti 1983, 235.
- 7 April 1747, (13): Pannuti 1983, 249.
- 23 December 1747, (13): Pannuti 1983.
- 20 November 1748, (3): Pannuti 1983, 268.
- 2 April 1752, (1): Pannuti 1983, 303.
- 16 April 1752, (1): Pannuti 1983, 303.
- 8 October 1752, (2): Pannuti 1983, 311.
- 29 October 1752, (1): Pannuti 1983, 313.
- 5 May 1754, (1): Ruggiero 1885, 154-155.
- 29 June 1755, (1): Pannuti 1983, 355.
- 20 July 1755, (4): Pannuti 1983, 357.

11 January 1756, (1): Pannuti 1983, 368.
15 May 1756, (1): Pannuti 1983, 373.
18 December 1756, (1): Ruggiero 1885, 210-211.
24 December 1756, (2): Ruggiero 1885, 211.
11 February 1757, (1): Ruggiero 1885, 216.
5 March 1757, (unknown quantity): Ruggiero 1885.
4 November 1757, (3): Ruggiero 1885, 244.
5 November 1757, (2): Ruggiero 1885, 244.
5 November 1757, (6): Ruggiero 1885, 244.
8 November 1757, (1, wooden): Ruggiero 1885, 245.
12 November 1757, (2): Ruggiero 1885, 246.
15 July 1758, (3): Ruggiero 1885, 264.
22 July 1758, (3): Ruggiero 1885, 264.
17 April 1761, (13): Ruggiero 1885, 346.
29 January 1762, (1): Ruggiero 1885, 382.
30 January 1762, (1): Ruggiero 1885, 382.
26 October 1764, (1): Ruggiero 1885, 450.
23 November 1764, (2): Ruggiero 1885, 451.
15 December 1764, (2): Ruggiero 1885, 453.
4 January 1765, (1): Ruggiero 1885, 454.
5 January 1765, (1): Ruggiero 1885, 454.

NINETEENTH CENTURY

Furniture found: wooden shelving on metal supports/ small wooden chest with metal fittings and lock/ large wooden chest with bronze fittings/ wooden racks with food in vessels/ bronze deer leg/ chest with lock and terracotta vessels containing food/ bronze ram leg with wooden remains/ small wooden chest with glassware and a bronze bracelet/ large wooden chest with iron locks, contents: food/ small wooden chest with ten silver coins; find spot: upper floor of the Casa d'Argo (II 2) with various service rooms, north west corner, along the *peristylum* (cf. Maiuri 1958 fig. 302, rooms a 1 to a 4); source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditì, 21 January 1828; cf. Ruggiero 1885, 539): 'La parte anteriore dell'antica abitazione. In bella simmetria e due a due in linea verticale esistevano a' lati di questa stanzina degli utensili di ferro foderati di legno d'una forma curiosa e molto singolare; servivano assai verosimilmente a sostenerli degli oggetti lungo le pareti ... Gli oggetti rinvenuti in questo stanzino sono i seguenti ... Un cassetto di legno ridotto in pezzi con degli ornamenti di ferro e colle sue piccole chiavi di una forma assai curiosa, ma delle quali esistono vari esempi nel R. Museo. Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale di R. scavi di Ercolano - N°. 1 Gennaio 1828; cf. Ruggiero 1885, 540). 'Il dì due del corrente, giorno memorabile pel nostro Paese, per l'Archeologia, e per le Arti, ebbe incominciamento la grande intrapresa, che deve restituire all'esistenza ed al giorno la leggiadra Ercolano. I lavori degli scavi sono stati condotti con tanto impegno e con tanto successo, che in pochi giorni l'interno d'un'abitazione ha incominciato a rivedere la luce. ... Di tratto in tratto e in linea verticale esistevano a'lati di questa stanzina degli utensili di ferro foderati di legno d'una forma singolare. Servivano assai verosimilmente a sostenerli degli oggetti lungo le pareti. Un muretto divisorio consistente in un'incannucciata rivestita d'intonaco, e sostenuta da un telajetto di legno si formava verso la fine un ripostiglio con delle scansie. Su di esse poggiava un vaso di creta, ed un bicchiere di vetro infranto; al di suolo giaceva un utensile di ferro, forse un treppiedi, così ossidato da non potersi descrivere. Una chiusura bivalva con grande serratura di ferro dovea munire l'ingresso di questo ripostiglio.

Gli oggetti rinvenuti antecedentemente negli altri punti della stanza sono i seguenti: A' 14. Un bel piatto di vetro, color celeste; è ridotto in frammenti ma si può facilmente restaurare. A' 16 un cassetto di legno bruciato con degli ornamenti di ferro e con le sue serrature. Esso racchiudeva della farina, la quale mescolata coll'aqua bollente che accompagnò l'eruzione, vi aveva formata della pasta di nuova specie, cotta di poi, come in un forno dalla cenere rovente, da cui fu ricoverta. Ve ne sono de' pezzi, su di cui è attaccata tuttora la tela, che l'involgeva. Questo cassetto insieme col piatto di vetro si sono ritrovati in qualche palmo d'altezza dal pavimento, ed avevano galleggiato sull'aqua, che si era intradotta nella stanza, rimanendo in tal situazione. Resina 31 gennaio 1828. L'Architetto Direttore Carlo Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2, (letter from Bonucci to the Soprintendente M. Arditì, 7 February 1828; cf. Ruggiero 1885, 541): 'Una stanza laterale a quella del camminetto, del quale ebbi l'onore di tenerLe discorso ne' miei ultimi rapporti, è stata in gran parte richiamata alla luce. Una cassa di legno, che a giudicarne dagli avanzi, e da' suoi ornamenti di bronzo e di ferro, doveva essere molto ampia, ne occupava per lungo tratto il pavimento. Essa racchiudeva della farina, la quale mescolata coll'aqua bollente che accompagnò l'eruzione, vi aveva formata della pasta di nuova specie, cotta di poi, come in un forno dalla cenere rovente da cui fu ricoverta. Io ne ho conservati de' grandi pezzi, su di cui è attaccata tuttavia la tela, che l'involgeva.⁸⁹⁶ Una salvietta piegata era lì presso ...

Quest'oggi i lavori si son rivolti al di là del noto camminetto, e tosto abbiamo incontrato una porta dischiusa e incarbonita, che ci ha dato l'adito in un picciolo ripostiglio, ove abbiam scoperte delle scansie, e sulla più alta, de' vasi di terra cotta ripieni di grano, e di lenticchie, un oliario con turracciolo di sovero, e con olio aggrumito nel fondo, ed una boccetta di vetro con liquore disseccato dall'azione del fuoco.⁸⁹⁷ Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditì, 14 February 1828; cf. Ruggiero 1885, 541/542): 'Essendosi proseguiti gli scavi intorno alla scansia della dispensuola accennata nel mio anteced.º rapporto, si è rinvenuto un vasetto per versarvi l'olio da un altro più grande, e delle ossa di presciuto con degli avanzi di carni salate. Non si è però finito di sgombrare il detto

⁸⁹⁶ Ruggiero (1885, 541) here gives the inventory number: 'Napoli, Museo Nazionale N° 84698?'.
⁸⁹⁷ The roof of the room is flat, the floor provided with 'mattoni pesti'. According to Bonucci, the room was used 'per dispensa, e per oliario, horreum et olearium. Ivi potevano essere riposti tutte le proviazioni d'inverno.'

recinto a cagione di alcune circostanze locali; ma si è scavato immediatam.⁴ appresso al camminetto o apertura pel fumo, e vi sono scoperte altre scansie incarbonite, chiuse da una porta con grande serratura di ferro, e contenenti un vaso di creta ed un bicchiere infranto, di vetro.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditi, 25 February 1828; cf. Ruggiero 1885, 542): 'Si è interamente vuotata la picciola dispensa indicata negli ultimi rapporti, e vi si son rinvenuti otto vasi di creta, di cui uno ripieno di miele' [for wine/fluids] ... 'La sua porta di legno era chiusa ed intatta; delle larghe falce la dividevano in due compartimenti. Essa era introdotta in una saracinesca, costume che fu poi conservato ne' castelli delle vecchie Baronie, e che ritenne il nome di que' tempi. Io ho formato il disegno di questa picciola porta, e glielo rimetterò col Giornale di questo mese ...' [drawing absent].

Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale de' R. Scavi d'Ercolano N° 2, Febbraio 1828; cf. Ruggiero 1885, 543): 'La scoperta della stanza e la natura degli oggetti ivi rinvenuti ci dovevano giustamente far congetturare che non fosse lontano il sito (horreum) dove solevano riporsi le provvisioni d'inverno e tutti i commestibili necessari ad una grande famiglia. In effetti, il dì 6, per una porta incarbonita e dischiusa avemmo l'adito in un picciolo passaggio (fauces), e quindi in uno stanzino (fig.: 1. N. 1), che conteneva una scansia su di cui poggiavano de' vasi di terra cotta ripieni di farro, di lenti e di miele ... Resina 31 marzo 1828. L'arch. Direttore Carlo Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale de' R. scavi d'Ercolano N° 2, Febbraio 1828; cf. Ruggiero 1885, 545): 'Degli oggetti in bronzo fra' quali un picciolo piede di cervo, ornamento elegante d'un mobile, si son raccolti in questo piano.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditi, 10 March 1828; cf. Ruggiero 1885, 546): '... Sua Maestà è passata infine ad assistere per qualche momento ad una ricerca eseguita in uno stanzino ov'è apparso sotto di Lei sguardi un racchiuso di legname colle analoghe serrature, e che conservava de' vasi di creta l'un sull'altro ammassati.'

Napoli, archivio storico VII, C. 9, Fascicolo 2, (letter from Bonucci to the Soprintendente M. Arditi, 17 March 1828; cf. Ruggiero 1885, 546): 'La scoperta d'uno stipo di legno incominciata sotto gli sguardi di Sua Maestà, è stata coronata da vari oggetti interessanti, oltre di que' già descritti. Fra vasi di terra cotta di varia grandezza e di varie fogge, ivi riposti, se ne son rinvenuti due conici, uno de' quali conteneva circa 20 fichi secchi ...'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditi, 17 March 1828; cf. Ruggiero 1885, 546): 'Sotto uno de' portici del cortile si è scoperto un piede di ariete, di bronzo, ornamento elegante d'un mobile, di cui si riconosce il legno ritenutovi con un chiodetto di ferro. Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditi, 26 March 1828; cf. Ruggiero 1885, 547): 'Tutto però indica fin'ora che questo piano [superiore] non era di grande importanza, che non contenesse se non i luoghi di servizio per gli appartamenti inferiori, alcune stanze per l'inverno (Plinio il Giov. Lib. II, ep. 17), e gli alloggi per gli schiavi e pe' liberti della famiglia.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 Giornale de' R. Scavi d'Ercolano N° 3, marzo 1828; cf. Ruggiero 1885, 547): 'Oltrepassando la dispensuola (fig. 1, N.1) abbiamo scoperto a' principj di questo mese un terzo ripostiglio rinchiuso da due porte, e subito dopo due camere, (coenacula N. 3 e 4) con un poggio a' fianchi e fregiato da modesti e semplici ornamenti ... Per un corridoretto (N. 5), al quale si poteva salire per mezzo di alcuni gradini di legno, pervenimmo, il dì 9 in uno stanzino (N. 6), nel cui angolo, (N. 7), scuoprimmo uno stipetto di legno, semplicissimo, e ben conservato. Poggiavano sulla sua sommità una tazzetta di vetro, ed un orciuolo di creta; al di dentro si rinvenne un braccialetto di bronzo indorato con teste di serpenti agli estremi, alcune conchiglie; di terra cotta, due lampe, delle quali una col lucignolo, e l'altra, nonpur anche usata con l'immagine d'un gallo..., ed una quantità di stoviglie, di vasi da olio e d'anfore; infine de' vasi di farina di qualche cereale, con grano e con dei fichi secchi, ...'

Napoli, archivio storico VII, C. 9, Fascicolo 2 Giornale de' R. Scavi d'Ercolano N° 3, marzo 1828; cf. Ruggiero 1885, 548): '... entrammo nella stanza (n. 8), ove incontrammo ... un'ampia cassa di legno con grandi serrature di ferro, ripiena di quella pasta, di cui facemmo parola nel primo N° di questo Giornale e che questa volta ci sembrò mescolata con miele, con latte, e con olio e ricoverta da una tela, di cui vi erano aderenti de' considerevoli frammenti. Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditi, 5 May 1828; cf. Ruggiero 1885, 549): 'Da uno di questi portici coverti, i Reali Personaggi son passati in

altri più intimi e più graziosi, ove essendosi eseguiti degli scavamenti si son rinvenuti i seguenti oggetti: Argento: 10 monete consolari conservate in un cassetto, i cui frammenti di legno incarbonito erano assai visibili.'

Piece of wooden furniture with metal appliqué; find spot: Casa d'Argo (II 2), upper floor; source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale de' R. Scavi d'Ercolano N°. 5, Maggio 1828; cf. Ruggiero 1885, 551; Bonucci 1835, 40-41): 'Al principio di questo mese si è interamente disgombrato un corridoio ed un' ampia stanza dell'appartamento superiore. Vi si è rinvenuto un mobile di legno con ornamenti di bronzo e di ferro in frammenti, una conca a due manichi, un vaso da olio e un tripode per candelabro a zampe di leone col suo disco superiore; il tutto di bronzo ... Bonucci.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditì, 17 May 1828; cf. Ruggiero 1885, 550): 'Due stanze d'un piano superiore sono state, in questa settimana, quasi interamente disgombrate. Vi si è rinvenuto un mobile di legno con ornamenti di bronzo e di ferro, in frammenti, ... Bonucci.'

Deer leg, ornament for furniture/ chest lock; find spot: Casa d'Argo (II 2), upper floor; source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (Notamento degli oggetti rinvenuti dal 2 Gennaio a' 17 Maggio ne' R. scavi d'Ercolano; cf. Ruggiero 1885, 550): '... Bronzo. Piede di cervo, ornamento d'un mobile. - ... Ferro. ... Una [sc. serratura] di cassa.'

Round bronze furniture appliqué/ handle for a chest or door; find spot: Casa d'Argo (II 2), upper floor; source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (letter from Bonucci to the Soprintendente M. Arditì, 17 July 1828; cf. Ruggiero 1885, 554): 'Oggetti antichi rinvenuti nella prima settimana del corrente Luglio. ... Bronzo ... Uno scudetto rotondo, ornamento di mobile ... una maniglia di cassa, o di porta.'

Bronze furniture ornaments; find spot: Casa d'Argo (II 2), upper floor; source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale de' R. Scavi d'Ercolano - N°. 7 - Luglio 1828; cf. Ruggiero 1885, 556): 'Nell'atrio si è rinvenuto ... Il dì 20 ... degli anelli, ed ornamenti di mobile di bronzo. ... Bonucci.'

Bronze furniture appliqué, including a lion; find spot: Casa d'Argo (II 2), upper floor; source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale del Real Scavo di Ercolano dal mese di agosto fino a dicembre 1828, cf. Ruggiero 1885, 560-561): 'In tutt'i punti delle abitazioni descritte si sono ritrovati. ... Di bronzo: qualche ornamento di mobile, fra i quali un leoncino ... Bonucci.'

Bronze furniture fittings/ wooden chest with food; find spot: Casa d'Argo (II 2), upper floor; source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (29 September 1828, cf. Ruggiero 1885, 557): 'Verbale. Innanzi di noi qui sottoscritti si sono rinvenuti in questa Settimana i seguenti oggetti ... Bronzo ... Un pezzo di guarnizione di mobile ... Un anello di mobile rotto in due parti ... Commestibili ... Una cassa di legno incarbonito con della pasta fatta forse col miele. Il tutto in una stanza del secondo piano. Ercolano 29 sett. 1828. L'Archit. Dir. C. Bonucci, Mauro Imparati Soprastante.'

Cupboards; find spot: Casa d'Argo (II 2), ground floor, four rooms east of the *peristylum* (date unknown); source: Bonucci 1835, 38: 'Quattro stanzini con armadi, e senza, per ripostigli. Vi si raccolsero dattili, frutta secche, legumi, ed un'accetta di ferro.'

Bone hinge segment; find spot: Casa di Aristide (II 1) (cf. Ruggiero 1885, tav. XII, 15 [fig. 172 below]); source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (Giornale del R. Scavo di Ercolano dal mese di Agosto fino a Dicembre 1828; cf. Ruggiero 1885, 560): '... Una nuova abitazione è incominciata a comparire in prosieguo dell'antecedente, da cui è divisa per mezzo d'un muro molto elevato. Nella stanza N°. 14 ... D'osso. Uno di quei soliti tubetti forati che sembrano aver dovuto servire per qualche utensile donnesco.'

Bronze handle for furniture/ iron ring from furniture; find spot: Casa di Aristide (II 1); source: Napoli, archivio storico VII, C. 9, Fascicolo 2 (Notamento degli oggetti rinvenuti innanzi S.A.I. la Granducessa Elena di Russia ne' R. scavi di Ercolano che si rimettono nel R. Museo, 13 January 1829; cf. Ruggiero

1885, 561): '... Bronzo: ... 18. Una maniglia di mobile ... - Ferro. 23. ... un anello rotto di mobile.'

Racks; find spot: Casa d'Argo (II 2), upper floor; source: Maiuri 1958, 361 (cf. Ruggiero 1885, 538-561): '< < Un muretto divisorio consistente in un'incannucciata rivestita d'intonaco e contenuta da un telaietto di legno vi formava verso la fine un ripostiglio con delle scansie > > . Era una cella penaria; nelle scansie superiori si rinvennero vasi di terracotta [and other vessels].

Cupboard with food; find spot: Casa d'Argo (II 2); source: Maiuri 1958, 361: 'Nel marzo dello stesso anno si scoprì un altro ripostiglio e, entro uno stipo, una gran quantità di stoviglie con cereali, legumi e commestibili; alcuni vasi conici contenevano fichi secchi, tagliati in mezzo, infornati e avvolti ancora in foglie forse di lauro; altri ripieni di una pasta che sembrò risultare di una composizione di farina, di miele e di olio, ricoperta da una tela.'

Racks and chests with vessels and food in a storeroom; find spot: Casa d'Argo (II 2); source: Maiuri 1958, 371: '... cellae penariae con scansie e casse in legno, vasellame e anfore contenenti ancora cereali, farina, legumi, frutta secche, noci, fichi e residui di miele e di olio; non meno di tre ripostigli in tre ambienti diversi.'

Bronze ring with fastening for furniture; find spot: Casa di Aristide (II 1) or house in the north-eastern corner of *Insula* II; source: Napoli, archivio storico VII, C. 9, Fascicolo 4 (Verbale, Ercolano 10 September 1830; cf. Ruggiero 1885, 565): 'Dichiariamo noi qui sottoscritti di essersi rinvenuti in nostra presenza i seguenti oggetti ne' R. Scavi di Ercolano ... Bronzo. Anello con la sua borchia per mobile ... Il tutto si è rinvenuto ne' piani superiori delle case N°. 1 e 4, ravvolti e strascinati dalla lava vulcanica. Tammaro. Bonucci.'

Bronze furniture fittings/ bronze human foot/ furniture appliqué/ wooden ornament for furniture; find spot: Casa del Genio (II 3); source: Napoli, archivio storico VII, C. 9, Fascicolo 4 (cf. Ruggiero 1885, 565): 'Oggetti trovati in Ercolano secondo il verbale del 31 ottobre 1830 e propriamente nella dritta dell'antica strada e nella casa N°. 3 nuovamente scoperta ... Bronzo ... Una guarnizione di mobile ... Un piede umano, ornamento di mobile.'

Napoli, archivio storico VII, C. 9, Fascicolo 4 (Giornale del Reale Scavo d'Ercolano dal 1° di agosto a tutto dicembre 1830): '... Gli oggetti rinvenuti in questi cinque mesi, e trasportati dalla lava in tutte le direzioni, sono ... Di Bronzo ... Un piede di forma umana, ornamento di mobile ... e delle guarnizioni di mobili; un ornamento di mobile, assai ben conservato, di legno. ... Bonucci.'

Small piece of furniture fitting; find spot unknown; source: Napoli, archivio storico VII, C. 9, Fascicolo 4 (cf. Ruggiero 1885, 567-568): 'Notamento degli oggetti antichi rinvenuti ne' R. Scavi di Ercolano dal dì 5 luglio 1831 fino al 31 dicembre da inviarsi nel R. Museo Borbonico ... - Bronzo. Un picciolo pezzo, guarnizione di qualche mobile ... Un picciolo pezzo, ornamento di qualche mobile ... Spediti in Napoli li 9 febbraio 1832.'

Small round piece of furniture fitting; find spot unknown; source: Napoli, archivio storico VII, C. 9, Fascicolo 5 (2 March 1832; cf. Ruggiero 1885, 568): 'Notamento degli oggetti rinvenuti ne' gli scavi di Ercolano dal 1° gennaio 1832, fino al 29 febbraio detto, da inviarsi nel Rl. Museo Borbonico, e sono: Bronzo. ... Un picciolo pezzo rotondo appartenente a guarnizione di qualche mobile.'

23 bronze fragments of a bed (legs?); find spot unknown; source: Napoli, archivio storico VII, C. 9, Fascicolo 7 (19 June 1834; cf. Ruggiero 1885, 569): 'Notamento degli oggetti rinvenuti nei Reali Scavi di Ercolano dal dì 1° ottobre, 1833, sino al dì 18 giugno 1834. Bronzo ... Frammenti di lettisternio numero 23 ... Il Soprastante Pietrantonio Paderni.'

6 fragments of bronze furniture legs; find spot unknown; source: Napoli, archivio storico VII, C. 9, Fascicolo 8 (cf. Ruggiero 1885, 570) 'Notamento degli oggetti rinvenuti nei Reali Scavi di Ercolano dal 19 giugno 1834 fino sino al dì 30 dicembre 1835. Bronzo. ... N°. 6 frammenti di bronzo appartenenti ad un

lettisternio. Paderni.'

Piece of wooden furniture; find spot: Casa d'Argo (II 2), ground floor; source: Bonucci 1835, 29: 'In questi ultimi tempi, (nel 1834, e 1835) si stanno scorrendo i piani inferiori, che sembrano destinati alla cucina, ai bagni, alla dimora degli schiavi, ed agli uffici più ordinari della famiglia ... ed un mobile di legno, che dal suo colore fu ravvisato di ciriegio.'

Bone hinge segments/ bone furniture fittings/ wooden seat; find spot unknown; source: Napoli, archivio storico VII, C. 8, Fascicolo 1 (letter Fiorelli to the Soprintendente, 8 December 1861; cf. Ruggiero 1885, 582): '... ieri ... si è rinvenuto fra' ruderi di un secondo piano il pavimento di una stanza, con molti oggetti antichi sovr'esso caduti. Si è trovato ... de' pezzi cilindrici d'osso forati riuniti tra loro, mercè assicelli di legno e vari anelli di osso per guarnizioni di mobili. Spedisco oggi stesso tutti questi oggetti a cotesto Museo, dolente di non aver potuto serbare illesi alcuni cesti di vimini, canistra, ed una sedia anche di legno, ch'essendo carbonizzati e scavandosi verticalmente, non han potuto conservarsi.'

Bronze fittings; find spot unknown; source: Napoli, archivio storico VII, C. 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Marzo 1869; cf. Ruggiero 1885, 585): '... 15 detto ...; ed in Bronzo tre piccole borchie, delle quali due sono rotte per metà ed un'altra è unita ad un piccolo perno di legno che forse faceva parte di qualche mobile ... Il Soprastante N. Pagano.'

Bone hinge segment; find spot unknown; source: Napoli, archivio storico VII, C. 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Aprile 1869; cf. Ruggiero 1885, 585): '5 detto ... e si è rinvenuto in Osso, un pezzo cilindrico forato, rotto in tre pezzi ...'

Furniture leg; find spot unknown; source: Napoli, archivio storico VII, C. 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Aprile 1869; cf. Ruggiero 1885, 586): '24 detto. Nello scavo eseguito in questa giornata si è rinvenuto all'altezza del primo piano in Bronzo ... ed una specie di piede di mobile che termina nella base con una svolta a paletta ed al disopra di essa vi è una prominenzza che sembra una vite. Lungo pal. 0,92 ... Pagano.'

Bed leg; find spot: Casa del Tramezzo di Legno (cf. De Kind 1992, 141); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Maggio 1869; cf. Ruggiero 1885, 591): '28 detto. Finalmente nella prima sala a pianterreno a sinistra dell'atrio di detta casa, in Bronzo = Un piede di sedia o letto formato da N°. sei pezzi torniti, il più grande dei quali è alquanto schiacciato ed è alto met. 0,17 e di diam°. m°. 0,16; il 2°. è alto mill. 52 e di diam°. met°. 0,13 con due piccoli frammenti distaccati del suo giro; il 3°. è alto mill. 45 e di diam. met°. 0,13; il 4°. è alto mill. 40 e di diam°. met. 0,12; il 5°. è alto mill. 35 e di diam°. met°. 0,11, un poco rotto nel giro; il 6° è alto mill. 40 e di diam°. mill. 80. ... Pagano.'

Furniture leg/ wooden rack with kitchen utensils/ wooden rack with kitchen utensils/ wooden cupboard with drawer at the top and doors beneath, equipped with bronze fittings and bone hinges; find spot: Casa del Tramezzo di Legno; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Maggio 1869; cf. Ruggiero 1885, 587): '... (sul lato sinistro della strada, all'altezza del primo piano e di rincontro alla casa della citata porta di legno): 1. maggio ...; ed ivi ancora in legno alcuni frammenti di un piede di mobile, formato da una sottile colonnetta di legno intramezzata da due rotelline pure di legno poste a linea orizzontale. ... 13 detto. Nella stessa località del giorno precedente, e propriamente nella stanza al cui ingresso fu rinvenuta la porzione di porta di legno nel giorno 21 dello scorso mese, si è raccolto in un angolo di essa diversi oggetti in terracotta; cioè due anfore rotte in frammenti, e su di una scansia di legno diversi altri piccoli utensili da cucina della stessa qualità, ma tutti in frammenti pel peso delle pietre cadutevi sopra.' (Cf. Ruggiero 1885, 588): '14 detto. Nel proseguire lo scavo nella località dove il giorno di ieri si sono raccolti i diversi frammenti di utensili di cucina posti su di una scansia di legno, si è scoperto in seguito dello stesso muro un mobile di legno fatto a guisa di un armadio, alto in circa un metro e largo altrettanto, con tiratoio nella parte superiore e portelline nella parte inferiore guarnito con finimenti di bronzo.' (Cf. Ruggiero 1885, 588-589): '15 detto. Continuando lo scavo

nella stessa località di ieri si è tagliato il mobile suddetto per osservare se al di dentro conteneva oggetti, ma nulla vi si racchiudeva. A destra di detto mobile si è rinvenuto pure un tavolino di lavagna con suo piede di marmo sul quale erano riposti i seguenti oggetti in Bronzo. [Vessels and kitchen utensils, parts of locks, lamps; terracotta vessels and lamps] Marmo. [cf. Ruggiero 1885, 589] Un pilastrino colla sua base circolare sormontato dal corrispondente capitello che serviva di piede ad una lastra di lavagna per uso di tavolino. Osso. Una porzione di fuso lunga met. 0,08. Diversi frammenti cilindrici forati che servivano di cerniera al mobile sopradetto.'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di giugno 1869; cf. Ruggiero 1885, 592-593): '14 detto. Nella località a sinistra della prima casa a destra della strada e propriamente quella nel cui piano superiore fu trovata la porzione di porta di legno nel giorno 21 Aprile corrente anno, si è raccolto sul pavimento del piano superiore ... Marmo. Un trapezoforo per sostegno di tavola di marmo esprimente un Grifo alato, alto met. 0,60.'

Biclinium with boards; find spot: house II 5; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di giugno 1869; cf. Ruggiero 1885, 592-593): '19 detto. Lo scavo di questa giornata si è eseguito nella località della quarta casa a sinistra della strada e nella stanza superiore, la quale ha un angolo che resta addossato ad un pilastro di fabbrica, si è rinvenuto un sedile di legno a guisa di un divano, che si estende su due muri della stanza, formato ad angolo, con corrispondente spalliera lavorata a bugne e listelli, ma non si è potuto conservare per la carbonizzazione del legname. Solamente un piede di esso si è potuto raccogliere in frammenti, anche di legno tornito, che messi assieme formano l'altezza di met. 0,25. Di lato a detto sedile si è rinvenuto, in Marmo = Un tavolino di marmo bianco, largo met. 0,690 per met. 0,400, col piede di marmo colorato detto africano, formato da un pilastrino in tre pezzi; il più lungo dei quali serve di sostegno agli altri due più piccoli situati nel fronte, e sormontato da una testina di giallo antico di una figura Bacchica coronata di foglie e grappoli, e con ciocche di capelli che gli scendono sul petto. Gli occhi sono di pastiglia; il pezzo più alto è lungo metro 0,68, l'altro che poggia sulla base è alto met^o. 0,20 e mill. 40, il terzo è alto metro 0,20 e mill. 25; la testina bacchica che poggia su quest'ultimo è alta met^o. 0,20. Vi è anche la corrispondente basetta di marmo bianco, larga met^o. 0,10 e mill. 35. [+ fragments of the same marble].'

Ruggiero (1885, XII/XIII) mentions the same *biclinium* in his introduction: (19 June 1869) 'un banco da sedere, in angolo, con la spalliera lavorata a bozze e filetti'; see also Ruggiero 1885, LI (tav. XII: corner *Cardo* III inf./Dec. inf., Caupona 41 with backroom 49 [fig. 172 below]): 'Erano parimente in questa casa parecchie funi e una granata, e nel coenaculum un banco di legno da sedere, in angolo, con la spalliera ornata di bozze e listelli, accanto ad una tavola di marmo sostenuta da un piede di africano con in cima una testa bacchica di giallo antico.' Finally, Maiuri (1958, 446) also mentions it: Nel piano superiore si raccolsero il sedile in legno e la trapeza in marmo a cui accennano i rapporti di scavo.'

Bronze bed leg; find spot: house II 5; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di giugno 1869; cf. Ruggiero 1885, 593): 'Nella sala a pianterreno della quarta casa a sinistra della strada. (= tav. XII N^o. 27 [fig. 172 below]) '22. detto. Oggi nella stessa località indicata nel giorno di ieri si è raccolto in Bronzo un piede di mobile tornito spezzato in tre pezzi, il più grande dei quali è rotto in una parte del giro e vi sono due frammenti che gli appartengono, alto met^o. 0,20 e di diam. met^o. 0,15; il secondo è anche mancante di una piccola porzione, di diam^o. met^o. 0,10 e mill. 17; il terzo è intatto ed è di diam^o. met^o. 0,10 e mill. 15. Pel Soprastante L'ispettore Giulio de Petra [a glass amphora was found in the same room].'

Bronze bed leg; find spot: possibly Casa dello Scheletro (III 3) (cf. Ruggiero tav. XII 28 [fig. 172 below]; De Kind 1992, 130); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di luglio 1869; cf. Ruggiero 1885, 595): '1^o. detto ... nella seconda casa a dritta della strada che si entra per un cunicolo antico ... si è raccolto. Bronzo = Un piede di letto frammentato, lungo mill. 150, largo mill. 110. ... Lembo.'

Ruggiero (1885, XII/XIII) mentions three pieces in his introduction: 'Di suppellettili di casa fu visto, <...>, tre armadi o stipetti (17 marzo 1828, 14 maggio 1869 e 13 febbraio 1871), il secondo dei quali aveva i finimenti di bronzo, un cassetto sopra e due portelline nel basso.'

Bed; find spot: Casa dello Scheletro (III 3), first floor; source: Ruggiero 1885, XII/XIII: 'una sedia a braccioli con intagli di ovoli (17 febbraio 1871)'; Ruggiero 1885, XLVIII: 'nel piano superiore, di legno in carbone, <...>, una sedia a braccioli intagliata con ovoli (17 febbraio 1871)...' Maiuri 1958, 222 and 471 nt. 36: '... una sedia con la spalliera e braccioli intagliati con ovoli.'

Small cupboard with lock/ bed with metal fittings; find spot: probably Casa del Tramezzo di Legno (III 11), on the *peristylum* (cf. Ruggiero 1885, tav. XII N°. 34 [fig. 172 below]); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Febbraio 1871; cf. Ruggiero 1885, 604): '11 Sul lato che guarda il settentrione, in una stanza del piano superiore che corrisponde alle spalle della scalinata di fabbrica sporgente alla strada, si è raccolto ... 13. in Bronzo: una serratura a cassonetto col suo corrente di bronzo aderente nell'interno, larga mill. 70. Detta serratura è stata trovata vicino ad un armadietto di legno carbonizzato. 15. ... Si è proceduto ... a ricercare se nell'interno dell'armadietto citato il giorno 13 corrente vi erano oggetti, e quindi disfatto il mobile, per essere il legno fragilissimo da non poterne ottenere alcuna impronta, si è raccolto al di dentro di esso, in Terracotta = Una lucerna ... Altra in tutto simile. Vetro. Alcuni frammenti di una bottiglia ...'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Febbraio 1871; cf. Ruggiero 1885, 604-605): '17. Si è continuato nelle mentovate località a sinistra scendendo verso il mare, ed in una stanza del piano superiore sul lato sinistro, alle spalle della scalinata di fabbrica sporgente alla strada, eravi forse una sedia di appoggio in legno carbonizzato, la cui parte inferiore si è trovata tutta disfatta pel passaggio di un cunicolo, e solamente nella parte superiore della spalliera si è veduto essere il legno molto ben lavorato, ed a stento se ne è potuto raccogliere un pezzo scolpito di ornato ad ovoli. Ferro = Alcuni frammenti ossidati di perni appartenenti alla detta sedia. Bronzo = Un cerchietto pure che faceva parte della sedia, di diam°. mill. 24. Altro più piccolo, anche parte della sedia, di diam°. mill. 21' ... Pagano.'

Bone hinge segment/ metal furniture legs; find spot unknown; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli Scavi di Ercolano. Mese di marzo 1871; cf. Ruggiero 1885, 605): 'Nel 2°. compreso a sinistra alle spalle della scalinata di fabbrica, al pianterreno ... '17. ... Osso. Un pezzo cilindrico rotto e mancante di qualche pezzo ... Ferro. Alcuni frammenti di piedi di qualche mobile.'

Furniture fittings, including a human foot as base for a stool; find spot: Casa del Tramezzo di Legno (III 11) north-western corner (cf. Ruggiero 1885, tav. XII, N°. 37 [fig. 172 below]); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale degli scavi di Ercolano. Mese di Aprile 1871; cf. Ruggiero 1885, 608): '4. Nella suddetta stanza si è raccolto in Bronzo = Un piccolo cerchio spezzato per guarnizione di mobile che ha un piccolissimo anelletto pendente nella parte esterna del giro, di diam°. mill. 75 = altro cerchio più piccolo, di diam°. mill. 53 = Un anelletto di diam°. mill. 30 = Un piede destro umano, forse per base di mobile. Esso è vuoto nell'interno ed ha qualche piccolo foro nella parte superiore per attaccarlo al legno, di lunghezza mill. 60 ... Pagano.'

Bone furniture fittings; find spot: Casa di Galba (VII 2-4); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 29 Febbraio 1872; cf. Ruggiero 1885, 617-618): '... Proseguono i cavamenti nelle terre, che trovansi in direzione della Via della Marina e soprastano il lato sinistro dell'altra strada, quale diramasi dalla medesima, prolungandosi verso il mezzogiorno. ... A' 15. ... [secondo piano] Osso. Forse un ornamento di mobile a forma di tazzolina, rotto nell'orlo, di diametro met°. 0,037 ... Galella.'

Bronze furniture appliqué; find spot unknown; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 maggio 1872; cf. Ruggiero 1885, 623): 'A' 25. ... Bronzo. Forse un pomo di mobile alto met. 0,05.'

Bronze furniture appliqué; find spot unknown; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 luglio 1872; cf. Ruggiero 1885, 624): 'Nel proseguirsi lo scavo nelle terre che sono in direzione della Via della Marina

si è raccolto: Bronzo: Un ornamento di mobile a forma di piccolo vaso ad un manico, il quale è per metà, dovendo il medesimo essere addossato ad altro oggetto, alto met. 0,09. Galella.'

Bronze furniture appliqué; find spot: south-western corner Ins. VII, bottega, cf. Ruggiero 1885, tav. XII N°. 48 [fig. 172 below]; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 dicembre 1872; cf. Ruggiero 1885, 631): 'A' 5. ... Bronzo: ... Un pezzo di forma angolare, forse per sostegno di mobile, lungo in un lato met. 0,09 ...'

Metal furniture leg; find spot unknown; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 dicembre 1872; cf. Ruggiero 1885, 633): 'A' 28. Si è oggi cominciato lo sgombrò della seconda località posta in seguito del quadrivio sul lato sinistro della Via della Marina andando verso l'oriente ed ivi si è raccolto: Ferro. ... Forse un piede di mobile lungo met. 0,32 ... Galella.'

Nine wooden chest hinges; find spot: taberna VII 1, room 2 (cf. Ruggiero 1885, tav. XII N°. 43 [fig. 172 below]); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 marzo 1873; cf. Ruggiero 1885, 636-637): 'A' 12. I lavori di cavamento hanno avuto luogo nella stanza a destra della prima bottega posta in seguito del quadrivio della Via della Marina andando verso l'oriente ed ivi all'altezza di circa tre metri dal pavimento, sonosi raccolti i seguenti oggetti ... Legno. Nove cerniere di cassa carbonizzate. Galella.'

Cupboard; find spot: bottega in the Terme del Foro (*Insula VI*), room f (cf. Ruggiero 1885, tav. XII n°. 76 [fig. 172 below]); source: Ruggiero 1885, XLIX-L: '1873 ...; e nella prima di esse non è ancora sparita l'impronta lasciata nella terra da un armadio addossato al muro, costruito come allora si usava, con assi strette ed in piedi, congiunte alternatamente da una più stretta assicella sovrapposta.'

Bronze furniture appliqué?; find spot: Terme del Foro, *palaestra* (cf. Ruggiero, 1885, tav. XII, N°. 52 [fig. 172 below]); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 30 giugno 1873; cf. Ruggiero 1885, 642): '... I lavori di cavamento sonosi ora ripresi nelle terre, che soprastano le località poste sul lato Orientale della Via che traversa quella della Marina ... A' 17. Bronzo: Un frammento di fascia con quattro fori rettangolari, forse per ornamento di mobile, lungo met. 0,11 ... Galella.'

Bronze furniture fittings; find spot unknown; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 gennaio 1874; cf. Ruggiero 1885, 648): 'A' 2. ... si proseguono i cavamenti nelle terre che trovansi in direzione della Via della Marina e quivi si è raccolto in Bronzo, ... un frammento rettangolare cisellato ad ovoli, lungo met. 0,11; largo met. 0,025. ... Galella.'

Bone hinges; find spot: Terme del Foro, *palaestra* (cf. Ruggiero 1885, tav. XII no. 52 [fig. 172 below]); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 18 Febbraio 1874; cf. Ruggiero 1885, 650): '... A' 21. Si prosegue lo sgombrò delle anzidette terre con essersi raccolti alcuni frammenti di cerniere in Osso ... Galella.'

Bone hinge segment; find spot unknown; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 30 aprile 1874; cf. Ruggiero 1885, 651-652): 'A' 10. Continuandosi tuttora lo scavo nelle terre di sopra indicate, in dove si sono scoperte le mura di una località che sembra far parte della prima casa in seguito del quadrivio della Via della Marina andando verso il settentrione; sonosi raccolti i seguenti oggetti all'altezza di circa due metri e mezzo. ... Osso: Una cerniera ben conservata ... Galella.'

Bronze part of a chest lock; find spot: Casa di Galba (VII 2-4)?; source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 30

settembre 1874; cf. Ruggiero 1885, 659): '... Vengono proseguiti i cavamenti nelle località scoperte tra le terre in direzione della Via della Marina, le quali son poste sul lato sinistro, ed in seguito del quadrivio ... A' 4. ... Bronzo ... Una piccola mappa di cassa, lungo 0,12.'

Two bone hinge segments; find spot: bottega VII 1 b (cf. Ruggiero 1885, tav. XII N°. 59 [fig. 172 below]); source: Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 1 (Giornale redatto dal Soprintendente degli scavi di Ercolano dal 1°. al 31 luglio 1875; cf. Ruggiero 1885, 669-670) '... Proseguono i cavamenti sulle terre esistenti in direzione del lato orientale dell'Edificio Termale ... A' 23. Come i giorni decorsi si è travagliato con essersi raccolto all'entrata della 2^a. bottega posta sul lato destro del nuovo tronco di via ... A' 27. Si continua il disterro nella entrata della bottega di sopra cennata, e vi si è raccolto ... Osso. Due piccole cerniere di cassa. Galella.'

Reports of the dispatch of pieces to the museum at Naples and inventory lists from the excavation itself.

Napoli, archivio storico VII, C. 9, Fascicolo 2 (Report by the Soprintendente M. Arditì on finds sent to the museum, dated 30 December 1828):

'13-8-28 ... Bronzo ... no. 5. Una serratura di cassetta rotonda, circondata di chiodi di bronzo in frammenti.
23-8-1828 ... Bronzo ... no. 22. Un apparecchio nuovo e curioso per guarnizione di mobile o porta con legno incarbonito al di dentro.
18-9-1828 Bronzo ... no. 28. Un picciolo ornamento di mobile ...
17-10-1828 Bronzo ... no. 39. Tre piedi di leone diversi, ornamento di mobile.
10-12-1828 Bronzo ... no. 54. Un leoncino ornamento di mobile.'

Napoli, archivio storico VII, C. 9, Fascicolo 2 (Report by the Soprintendente M. Arditì on finds sent to the museum, dated 31 December 1828; cf. Ruggiero 1885, 560): 'Bronzo ... Una maniglia di porta, o di cassa. ... Uno scudetto rotondo ornamento d'un mobile. ... M. Arditì.'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 21 maggio 1869 N°. 3 (Sito del R. 1^a Casa a destra salendo dalla marina. Località a sinistra, sul piano superiore al cui ingresso fu trovata la porta di legno):

N°. d'ordine/N°. della libretta ...

41/70 Diversi frammenti cilindrici forati, che servivano di cerniera ad un mobile.

49/78 Un pezzo informe che fa parte delle serrature di un mobile, bronzo, lungo met. 0.15 [Stanza alle spalle della suindicata].'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 3 luglio 1869 N°. 5:

4/182 Parte del cassetto dov'erano dette monete ed anello. Legno. Lunghezz. mill. 190. Largh. mill. 40, data del ritr. 3 luglio 1869/sito del ritr.: Seconda casa a dritta della strada che mena al Teatro nella 1.^a stanza anche a dritta del pianterreno [anello di argento + 4 monete].

5/183 Basetta di lavagna appartenente a detto cassetto = lunga mill. 110. Larga mill. 60. Pietra, mill. 110 per 60. Sottoscr.: il Soprintendente Camillo Lembo.' 'Ho ricevuto ed immesso in questo Museo li sud.^{ti} oggetti. Il controlloro.'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 8 marzo 1871 N°. 7:

3/8 Un pezzo cilindrico forato rotto in tre pezzi/ Osso/ 5 aprile 1869/ 1^a casa a destra salendo dalla marina.

7/20 Una specie di piede di mobile che termina nella base con una svolta a paletta, ed al di sopra di essa vi è una prominenzza che sembra una vite/ Bronzo/ lungo p.: 0.92/ 24 aprile 1869/ 1^a casa salendo dalla marina, stanza del piano super.^e che confina col muro della scalinata di fabbrica sporgente alla strada.

- 12/105 Un piede di sedia o di letto composto di sei pezzi torniti [bronzo/ 28 maggio 1869/ 1ª casa a destra salendo la strada nella 1ª sala a sinistra dell'atrio] Il più grande dei quali è alquanto schiacciato: al. met°. 0.17 diam°. met. 0.16. Il 2°. è alto mill. 52, diam°. met°. 0.13 ed ha due piccoli frammenti distaccati del suo giro; il 3°. è alto mill. 45. diam°. met°. 0.13; il 4°. è alto mill. 40 diam°. met°. 0.12; il 5° è alto mill. 40, diam°. 80.
- 28/151 Un piede di mobile tornito, in tre pezzi; il più grande dei quali è rotto in una parte del giro e ci sono due frammenti che gli appartengono [bronzo] Alto met°. 0.20. diam°. met°. 0.15./ Il 2°. è anche mancante di una piccola porzione/ Br./ Diam°. met°. 0.10 e mill. 17./ Il 3°. è intatto ed è di diam°. met°. 0.10 e mill. 15./ 22 d° / idem.
- 51/230 Lucerna di terracotta ...
- 51/231 Lucerna di terracotta ... Trovata [230 and 231] il dì 15 Febbraio 1871, al di dentro di un armadietto di legno nella suindicata stanza [nella stanza superiore alle spalle della scalinata di fabbrica sporgente alla strada].

Si rimettono in ultimo due frammenti di cornici in legno. Non portano numero per non poterne garantire la durata, atteso la carbonizzazione/ Ercolano 8 Marzo 1871. Il Soprastante Niccola Pagano.' 'Oggi 9 marzo 18settantuno. Ho ricevuto ed immesso in questo Museo gli oggetti descritti nel presente notamento. Il controlloro.'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 29 [?] Dicembre 1871 N°. 13:

- 29/287 Un piede destro umano, forse per base di mobile, vuoto e con piccolo foro nella parte superiore per attaccarlo al legno/ Br./ Alto m. 0.080/ 4 Aprile 1871/ Stanza a sinistra di detta scalinata [Camera laterale al sud.° porticato/ secondo compreso a sinistra alle spalle della scalinata di fabbrica, scendendo la strada della Marina]. Il Soprastante Andrea Galella.'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 21 Maggio 1872 N°. 15:

- 18/396 Forse un ornamento di mobile scheggiato nella circonferenza/ Osso/ Diam. 0.037/ 15 febb. 1872/ Nelle dette terre presso il pav.^{no} di una 2° piano [= terre in direz^{me} della Via della Marina = terre che sovrastano il nuovo tronco di strada che si dirama da quella della Marina]. Galella [arrived in the museum on 21 May 1872].'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 3 Giugno 1873. N°. 26:

- 33/654 Otto cerniere di cassa carbonizzate/ Legno/ 12 Marzo 1873/ Stanza a destra della 1ª bottega ad Oriente in seguito del Quadrivio della Via della Marina. Galella [arrived in the museum on 3 June 1883].'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 31 Marzo 1874. N°. 27:

- 7/682 Una striscia intrecciata con alcuni piccoli chiodi spezzati, forse sostegno di cassa/ Br./ di lunghezza girata m. 0.75/ 12 Marzo 1874/ Bottega contigua alla 1ª casa posta in seguito del quadrivio verso il lato settentrionale della Via della Marina.'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 10 Giugno 1874. N°. 28:

- 53/695 Una cerniera ben conservata, ... / Osso/ 10 Aprile detto [1874]/ Stanza appartenente alla predetta casa [Bottega che precede la casa posta in seguito del quadrivio].
- 57/748 Quattro piccole cerniere/ Legno/ 25 Marzo detto/ Stanzetta a destra in seguito del protiro della suddetta casa. Galella, [arrived at the museum on 10 June 1874].'

Napoli, archivio storico, Scaff. VII, Scompart. C, Cartella 8, Fascicolo 2: 'Notamento degli oggetti spediti al Museo Nazionale il dì 27 Luglio 1875 N°. 32:

- 37/892 Una piccola cerniera/ Osso/ 27 Lug.° 1875/ 2ª bottega a destra del nuovo tronco di strada [arrived

at the museum on 27 July 1875].’

Napoli, archivio storico, Scaffale VII, Scompartimento C, Cartella 9, Fascicolo N°. 12, Ercolano 1892: ‘Notamento di tutta la suppellettile Archeologica di Ercolano, Napoli 26 Gennaio 1892 ...

Il predetto Notamento Generale è stato diviso in tre parti:

- 1° Quello della suppellettile propriamente detta;
- 2° Quello della suppellettile antiquaria in deposito nell’Armadio di legno sito nella stanza del modello in sughero del Teatro di Ercolano;
- 3° Quello della suppellettile archeologica che rattrovasi in deposito nelle due stanze presso la cosiddetta Casa d’Argo (II 2).

Notamento della suppellettile antiquaria che è in deposito nell’armadio di legno sito nella stanza del modello in sughero del Teatro di Ercolano:

[Always two numbers: 1 = Numero progressivo degli oggetti; 2 = Numero dell’inventario. Notam.: La libretta dei ritrovamenti compilata da’ Soprastanti de Caro e Pagano dal 1861 al 1871, quando cioè si eseguirono i lavori di scavo in Ercolano]

49/913 Pezzetto di osso cilindrico forato e diviso in due. Osso.

50/892 Piccola cerniera, v. cit. Notam. Osso.

51/892 Altri frammenti di osso carbonizzati, a forma cilindrica e carbonizzati. Osso.

52/892 Altri frammenti di osso carbonizzati, cilindrici e forati, alcuni de’ quali sono aderenti ad un grosso chiodo di ferro.

53/892 Altri pochi frammenti di osso carbonizzati, con due bottoni circolari e forati, tutti carbonizzati.

73/892 Piccolo busto virile con elmo, cui è legato un anelletto, forse da servire o come roniano da stadera o per ornamento di mobile. Bronzo. ...

[ends with the observation]:

Una libretta in cui notavansi giornalmente da’ Soprastanti de Caro e Pagano i trovamenti degli scavi che vennero eseguiti in Ercolano dal 23 Novembre 1861 fino al mese di Febbraio 1871. Torna utile qui però’ dichiarare che in fine dell’ultima pagina di questa libretta è detto che ne fa seguito altra, la quale, dopo ricerche fatte, non è stata per nulla rinvenuta tanto in Ercolano, quanto nell’ Archivio della Direzione degli Scavi in Napoli non che in quello di Pompei.

Ercolano, Novembre 1891. Il Reggente Conservatore de’ Musei e Scavi, Antonio Palumbo.’

Archivio storico, Scaffale VII, Scompartimento C, Cartella 9, Fascicolo N°. 12: ‘Nota sommaria degli oggetti che si conservano nell’armadio della stanza del Modello in sughero di Ercolano - ... Oggi 5 novembre 1891:

2° scompartimento: Bronzo ... una serratura ... Osso. Due frammentini di forma cilindrica.

3° scompartimento: ... Osso. Varii frammenti cilindrici forati.

4° scompartimento: ... Osso ... altro pezzo di osso forato rotto e mancante. ...

= Libretto degli scavi di Ercolano dal 1861 al 1871.

Ercolano 5 novembre 1891, Antonio Palumbo; Galella Guglielmo.’

Archivio storico, Scaffale VII, Scompartimento C, Cartella 9, Fascicolo N°. 12: ‘Notamento della suppellettile archeologica che rattrovasi depositata nelle due stanze presso la cosiddetta Casa di Argo (II 2) in Ercolano. 100 ... e, una cerniera per porta o cassa (?) tutto ravvolto in carta. Bronzo.

Ercolano Novembre 1891, Il R. Conservatore de’ Musei e Scavi, Antonio Palumbo.’

Archivio storico, Scaffale VII, Scompartimento C, Cartella 9, Fascicolo N°. 14: ‘Napoli li 19 settembre 1898 Giusta le disposizioni date da V.V. Illma degli oggetti antichi di minore importanza rimaste in deposito nei Monumenti di Ercolano venne compilato un notamento, in duplice esemplare di cui uno, insieme ai detti oggetti è stato dato in consegna a quel capoposto, e l’altro debitamente firmato qui acchiuso mi onoro trasmetterlo alla V.V. Illma. L’assistente Tommasini Alessandro.

Notamento della suppellettile archeologica depositata nel magazzino degli scavi scoperti di Ercolano, presso la così detta Casa d’Argo (II 2).

N° d’ordine/dei vecchi cataloghi; Descrizione; Materia.

43/42 Quattro frammenti di cerniere di casse. Osso.’

Archivio storico, Scaffale VII, Scompartimento C, Cartella 9, Fascicolo N°. 14: 20-6-1898, Alessandro Tommasini [regarding the dispatch of pieces to Naples].

'N°. d'ordine/N°. del vecchio inv.

103/S.N. Una cerniera scheggiata. Osso.

Il Soprastante Antonio Palumbo; L'assistente Tommasini Alessandro.'

[this is the response to a ministerial decree on the safe transport of pieces following a robbery on the night of 23/24 April 1898].

Archivio storico, Scaffale VII, Scompartimento C, Cartella 9, Fascicolo N°. 14: 'Notamento della suppellettile Archeologica che è in deposito nell'armadio di legno sito nella stanza del modello in sughero del Teatro di Ercolano.

N°. prog./N°. libretto (= libretta compilata dai Soprastanti De Caro e Pagano dal 1861 al 1871)

49/17 Un pezzetto d'osso cilindrico forato e diviso in due. Osso.

51/892 Altri frammenti d'osso carbonizzati a forma cilindrica e forati.

52/892 Altri frammenti d'osso carbonizzati cilindrici e forati, alcuni de'quali sono aderenti ad un grosso chiodo di ferro.

53/892 Altri pochi frammenti d'osso con due bottoni circolari e forati tutti carbonizzati.

Ercolano 10 dicembre 1891

Il R. Conservatore Antonio Palumbo.

Dai Sottoscritti funzionari il presente notamento è stato riscontrato perfettamente e trovato integro. Ercolano 8 maggio 1898. L'Assistente Tommasini Alessandro; Il Soprastante Antonio Palumbo.'

Archivio storico, Scaffale VII, Scompartimento C, Cartella 8, Fascicolo = 6 = 1898

[The following pieces were sent to Naples and received on 27 June 1898; acknowledgement of receipt signed by De Petra.]

'N°. Vecchi Cataloghi/ N°. d'Ordine.

48/97 Pezzo di osso carbonizzato rotto in due e forato superiormente, forse manico. Osso.

49/98 Cerniera per cassa, rotta e mancante d'una parte. Osso.

50/99 Due cerniere, delle quali una più piccola. Osso.

51/100 Cerniere di cassa, alcune frammentate. Osso.

52/101 Altri frammenti di Osso carbonizzati ed un chiodo ammesso a detti frammenti. Osso.

53/102 Altri pochi frammenti di osso con due piccolissime piastrelle circolari e forate, tutti carbonizzati. Osso.

s.n./103 Una cerniera scheggiata. Osso.'

TWENTIETH CENTURY

Rack; Casa dello Scheletro (III 3), first floor, room measuring 3.25 x 1.90 m.; 9-6-1927: '(scavo C, ambiente N° 1) Alla profondità di m. 1.10 dalla sommità del muro est s'è trovata attaccata alla parete nord una specie di scanzia di forma rettangolare, e formata di tavole carbonizzate. Misura m. 0.26 x 0.46.'

Bed leg (fragment); Casa dello Scheletro (III 3), ground floor, room 18; 5-7-1927: 'Nello scavo C s'è svuotato l'ambiente N° 17 del piano inferiore. Nel detto ambiente si entra solamente per il vano che trovasi sulla parete sud dell'interno dell'ambiente N° 15, vano già descritto il 2. u.s. L'ambiente in parola ha la forma rettangolare e misura m. 2.40 di lunghezza, per m. 2.75 di larghezza. E' un cubicolo. Tanto lo fa supporre sia un rialzo di pavimento che trovasi al lato ovest dell'ambiente, e sia un avanzo di un piede del letto trovato. Il rialzo ha il davanti e la soglia di marmo, ed è alto m. 0.15, largo m. 0.20, il resto e cioè m. 1.10 è di mosaico bianco.'

Bed legs (fragments); Casa a Graticcio (III 14), ground floor, room 11; 26-10-1927: '(scavo C, ambiente F) Quest'ambiente è forato anch'esso da due cunicoli uno già scavato e misura m. 1.10 x 1.85. Alla distanza di m. 1.30 dalla parete sud ed a m. 1.00 da quella ovest sono stati trovati N° 2 Piedi di letto di Bronzo (libr. trov. no. E 76) uno è ben conservato e misura m. 0.28 di altezza, mentre l'altro è ridotto in frantumi. Alla distanza di m. 1.60 dalla parete ovest, a m. 1.62 da quella sud si sono rinvenuti altri frammenti di piede di letto.'

8-11-1927: 'Alla distanza di m. 1.50 dalla parete est, ad 1.20 da quella sud, sul pavimento si sono rinvenuti i seguenti oggetti: Bronzo, Frammenti di piede di letto (E 77).'

In the *Descrizione di Ambienti* of 23-2-1929 these legs are again mentioned: '... Tornando indietro e percorrendo m. 4.75 girando a destra si trova una scala di legno carbonizzato e un vano che porta in un grosso ambiente segnato col N° 15. In quest'ambiente furono raccolti 4 piedi di letto di legno carbonizzato. ... L'ambiente N° 12 è alimentato di luce dal pozzo di luce. il N° 11 è illuminato dall'ambiente precedente.' *Libr. trov. no. E 76*: 'Data: 26-10-1927. Posto: Casa a graticcio (III 14), giardino. Descrizione: Bronzo. Piede di letto misura m. 0,28 di altezza.'

Libr. trov. no. E 77: 'Data: 8-11-1927. Posto: Casa a graticcio (III 14). Descrizione: Bronzo. Frammenti di piede di letto.'

Cupboard; Casa a Graticcio (III 14), first floor, room 1 (Cat.no. 35); 13-2-1928: 'Sulla parete sud all'altezza di m. 3.90 della casa sottostante, a m. 0.40 dall'attuale altezza del muro aderente all'angolo sud-ovest è stato trovato, ed è rimasto in sito una tavola con quadratura di legno carbonizzato. La tavola centrale è alta m. 0.67 larga m. 0.48. essa è infissa in quattro colonnine. I due laterali sono alti m. 0.78 e gli altri due, e cioè quello in alto e quello in basso, sono lunghi m. 0.61 e larghi m. 0.03. Il telaio è diviso in 3 parti mediante due pezzi tondi dello spessore di m. 0.025 che si trovano in linea orizzontale. L'oggetto in parola è alto m. 0.78 e largo m. 0.68 in totale. La parte superiore è infissa nel muro mediante due chiodi di ferro.'

Cupboard; Casa a Graticcio (III 14), first floor, room 2, (Cat.no. 36); 16-2-1928: 'All'altezza di m. 2.60 dal sottostante pavimento, a m. 1.05 dalla sommità dell'attuale muro, a m. 3.10 dallo ingresso, appoggiato sulla parete sud s'è trovato: Un'armadio carbonizzato. Il lato maggiore misura m. 0.80 di lunghezza per m. 0.60 di larghezza. Sono ben visibili i quattro pilastri laterali che sono dello spessore di m. 0.04. La parete sud, e quella ovest che aderiscono al muro sono alquanto conservate, mentre quella est, e quella nord sono in buona parte distrutte. A m. 0.42 dall'inizio superiore dell'armadio, al lato sud si nota la sporgenza di due chiodi di ferro. Essi servivano per sostenere una tavoletta dello spessore di m. 0.02. Sopra di essa si sono trovati i seguenti oggetti: vetro, coppa (E 145); id. (f.); terra cotta, vasettino (E 146); vetro, bottiglia (E 147); vetro, 2 tazze (E 148); pasta vitrea, astragoli in N° 20 (E 149); avorio, N° 2 dati (E 150); vetro, tazza (E 151)... Altri oggetti sono ancora conservati nell'interno dell'armadio, ma dato l'ora tardi si è rimandata la ricerca al giorno seguente.'

17-2-1928 Si è ripreso il lavoro per la ricerca degli altri oggetti che si trovano nell'armadio. Sulla seconda tavoletta che è a m. 0.64 dal fondo, e a m. 0.31 dalla prima si sono raccolti i seguenti oggetti: terra cotta, no. 4 piattini (E 152/153); vetro colorato, piatto (E 154); vetro, bottiglia (E 155); vetro, bicchiere (E 156); id. (E 157); id. (E 158); marmo, pietra per schiacciare i colori (E 159); terra cotta, bicchiere (E 160); terra

cotta, piatto (E 161); pasta vitrea, no. 23 coralli (E 162); bronzo, pinza (E 163); id. (E 164); bronzo, cardine (E 165); bronzo, peso (E 166); vetro, corallo (E 167); bronzo, no. 19 bollette (E 168); bronzo, cerniera (E 169), lunga m. 0.07, larga m. 0.03. Nel fondo della cassa si sono trovati i seguenti oggetti: bronzo, strumento di chirurgia? (E 170); avorio, no. 6 pezzi di avanzi di fuso (E 171); terra cotta grezza, piatto (E 172).'

Libr. trov. no. E 169: Data: 17-2-1928. Posto: Casa a graticcio (III 14), piano superiore. Descrizione: Bronzo, cerniera lunga m. 0.07, larga m. 0.03.'

Scheda no. E 169: E 'Posto del ritrovamento in un armadio di legno. Stato: integra, corrosa. Dimensioni: 16-6. Descrizione: Cerniera di mobilio con fori di fissaggio.'

Cupboard; Casa a Graticcio (III 14), first floor, room 2; 17-2-1928: 'A m. 0.28 dall'armadio descritto, a m. 1.50 dall'altezza del muro, sulla parete ovest trovasi un'altro armadio di legno carbonizzato dell'altezza di m. 1.02, lunghezza m. 0.35, profondità m. 0.25. E' completamente chiusa con serratura di bronzo. La parte anteriore dell'armadio tiene due porticine, ciascuna della larghezza di m. 0.16; i due stipiti frontali sono larghi m. 0.10. Le porticine sono attaccate agli stipiti mediante battoncini formati di una cerniera di osso ed una di legno sovrapposta, per tutta l'altezza delle porticine. La porta destra di chi guarda è sovrapposta a quella sinistra mediante un battito largo m. 0.024. Ogni porticina tiene per decorazione due listelli di osso infissi nel legno. Il listello misura m. 0.004 di larghezza e dista l'uno dall'altro m. 0.06.'

Two beds, marble table; Casa a Graticcio (III 14), first floor, room 2 (Cat.no. 5); 18-2-1928: 'All'estremità ovest di esso [sc. ambiente] si sono rinvenuti i seguenti oggetti: ... Marmo. Piede di tavolino (E 188), alto m. 0.87 comprese due basette. All'altezza di m. 0.52 dalla base notasi un Erma di Amorino, alta m. 0.20. Si osserva solamente la mano destra che tiene chiusa, ed aderente al petto. La testa è leggermente guasta a sinistra. Lo spessore della colonnina è di m. 0.07, e la larghezza è di m. 0.15. Ai due lati della colonnina si notano due sporgenze che servivano per fiori. Sulla parete sud e quella est vi sono due letti, uno lungo m. 2.30 e largo m. 1.29 e tiene la direzione est-ovest, e l'altro è di m. 2.00 di lunghezza, per 1.25 di larghezza e piglia la direzione sud-nord. Il primo conserva in parte la spalliera nord, che è alto m. 0.35 e lungo m. 1.20. Il secondo conserva sia la spalliera nord che quello est. Il 1° è alto m. 0.30, ed il 2° m. 0.33. Le spalliere del letto che si trovano al lato est del cubicolo poggiano sopra traversini dello spessore di m. 0.09, i due laterali m. 0.14. Il letto che trovasi al lato sud ha i traversini laterali di m. 0.16 di spessore, e gli altri 2 piazzati in senso opposto di m. 0.13 di spessore. I letti sono sollevati dal pavimento per m. 0.28. Alla distanza di m. 0.80 dalla parete nord; a 0.70 da quella est poggiato sul pavimento s'è trovato: bronzo: pentola. Sul letto sud si sono rinvenuti alcuni pezzi di commestibili, e su quello nord notasi avanzi di materassi?' [also found in the same room: glass, terracotta and bronze vessels and two bronze lamps].

Room 2 also appears in the *Descrizione di Ambienti* of 3-2-1929: 'N° 10 Questo è più grande degli altri ed è meglio arredato. Di lato due letti di legno carbonizzato si trovano in esso uno posto da est ad ovest, e l'altro da nord a sud. Le lettiere sono ben conservate. Sopra i letti furono raccolti avanzi di stoffa con due pezzi di pane. Il tutto carbonizzato. A m. 0.14 dall'estremità ovest del letto vi è un grosso armadio a muro e dall'interno di esso vi furono estratti una discreta quantità di oggetti di bronzo, vetro, terra cotta, pasta vitrea e di osso. Nella parete ovest un'altro armadio di piccole dimensioni di squisita fattura. Statuette di bronzo, monete, vasi di vetro e di terra cotta conteneva. Nell'angolo nord-ovest un tavolo con piede e base di marmo bianco. Sul piede vi è un'erma di amorino. Sul tavolo e sul pavimento furono raccolti oggetti di vetro e di bronzo di dimensioni diverse.'

Marble table; Casa a Graticcio, III 14, first floor, room 1; 20-2-1928: 'Nel 1° ambiente del piano superiore che si trova al lato est di quello segnato con la lettera F è stato sterrato il marmo già descritto il giorno 14 c.m. Esso era sorretto da una colonnina alta m. 0.52. base diametro m. 0.28; sia la colonnina che il tavolo sono di marmo bianco (n. 190).'

Room 1 is also referred to in the *Descrizione di Ambienti* of 23-2-1929: 'Il 1° vano N° 11 è largo m. 0.87 e porta in un cubicolo. In esso al lato est si trova un letto di legno carbonizzato con le relative lettiere. Sulla parete sud vi è un'avanzo di un armadiolo di legno carbonizzato e di sotto un tavolo con piede di marmo bianco'

Bed (fragment); Casa dello Scheletro (III 3), room 16? 30-3-1928: 'L'ambiente J dello scavo C è un corridoio che mette capo nell'ambiente N. 15. Misura m. 3.25 di lunghezza, per m. 0.93 di larghezza. ... L'ambiente K era un cubicolo lungo m. 1.94 e largo m. 1.64. Sulla parete sud si nota un'avanzo di letto di legno bruciato. Il letto era in direzione da sud a nord. N° due cunicoli attraversano l'ambiente in parola, uno da nord a sud ed è quello che ridussi il letto in frantumi, e l'altro da est ad ovest.'

Bed, marble table and wooden shelf; Casa del Tramezzo di Legno, bottega III 9, first floor; 17-4-1928: 'L'ambiente N.° 7 dello scavo C piano superiore è stato svuotato. Misura m. 2.90 di lunghezza, per 3.60 di larghezza. ... Due cunicoli attraversano il cubicolo, uno da ovest ad est e l'altro da nord a sud. Per tale motivo il letto ivi trovato è ridotto in piccolissimi pezzi. La lunghezza del letto era di m. 1.10, l'altezza di m. 0.295. Aderente al muro ovest dell'ambiente, ed a m. 1.20 dall'angolo nord-ovest vi era un Marmo Tavolo (E 213) col relativo piede. Questo è alto m. 0.635, e largo m. 0.20, il tavolo è lungo m. 0.96, largo m. 0.45 e spesso m. 0.06. Appoggiato sul pavimento vi era una tavoletta di legno carbonizzato, lunga m. 0.44 larga m. 0.28, e spesso m. 0.02, sopra vi era poggiato: terra cotta: coppa (E 214); vetro: unguentario (E 215); bronzo: moneta (E 216).'

Wooden cupboard or rack; Casa del Tramezzo di Legno or one of the adjoining shop rooms (III 6-12), room 6? 23-4-1928: 'Ambiente 19. A m. 0.40 dal lato sud del tavolo vi era un armadiolo di legno bruciato, largo m. 0.46 lungo m. 0.62 e lo spessore delle tavolette è di m. 0.03. Esso poggiava sul pavimento e nell'interno vi erano collocati i seguenti oggetti: bronzo: olpe (E 219); bronzo: patera (E 220); vetro: unguentario (E 221); id. (E 222); id. (E 223); vetro: coppetta (E 224); vetro: bottiglia (E 225); vetro: coppa (E 226); bronzo: piattello di candelabro (E 227); id. (E 228); bronzo: olpe (E 229); terracotta: piatto (E 230); id. (E 231); terracotta: portapiatto (E 232); terracotta: ariballo (E 233); terracotta: oenochoe (E 234); terracotta ariballo (E 235); bronzo: olpe (E 236); bronzo: amo da pesca (E 237).'

Bed; Casa del Tramezzo di Legno (III 12), ground floor, room 4 (Cat.no. 1); 27-4-1928: '(ambiente 21 dello scavo C) ... E' un cubicolo di forma quadrato avente m. 2.85 di lato ... A m. 1.45 dalla soglia attaccato alla parete ovest si nota un avanzo di letto di legno carbonizzato. Esso è sollevato dal terreno per m. 0.40 lungo m. 2.00, largo m. 1.28 ed alto m. 0.83. Tanto sulla parete sud, che quella ovest notasi avanzi della spalliera. Il letto compreso la spalliera ovest, è in buone condizioni. I laterali sono larghi m. 0.15, e i trasversali si contano in N.° di 7 e sono situati da nord a sud. La lunghezza di ciascuno di essi è di m. 1.00, e la larghezza è di m. 0.065. Tra una traversa e l'altra a m. 0.14 di distanza si trovano dei pezzotti di legno della lunghezza di m. 0.15 e la larghezza è di m. 0.10. Detti pezzotti formavano una specie di reticolato e pigliavano la direzione da ovest ad est.'

The bed also appears in the *Descrizione di Ambienti* of 27-5-1929: 'Segue il cubicolo N° 6: Misura m. 2.85 per lato ... la volta che era d'incannucciato ... A m. 1.45 dalla soglia attaccato alla parete ovest si trova un'avanzo di letto di legno carbonizzato. Esso è sollevato dal pavimento per m. 0.40, è lungo m. 2.00 largo m. 1.28 ed alto m. 0.83 compreso la lettiera. Il lato ovest è in buone condizioni di conservazione. I laterali sono larghi m. 0.15 e i trasversali si contano N° 7 e sono situati da nord a sud. La lunghezza di ognuno di essi è di m. 1.00 e la larghezza è di m. 0.065. Tra una traversa e l'altra a m. 0.14 di distanza si trovano traverse di legno della lunghezza di m. 0.15, e la larghezza è di m. 0.10. Dette traverse formano una specie di reticolato e servivano per sostenere i materassi. Nell'interno dell'ambiente furono raccolti delle statuette di bronzo, un peso, oggetti di terracotta, di bronzo, delle fave da semina e bulli.'

Cupboard/ bed leg (fragment)/ table leg (fragment)/ lock for a piece of storage furniture; Casa Sannitica, first floor (V 2);⁸⁹⁸ 3-5-1928: 'A m. 1.90 dalla terrazza lato nord è uscito un muro che è parallelo alla balaustra esso è alto m. 1.43. A m. 3.13 dalla parete ovest della terrazza stessa si è trovato sul pavimento, ed aderente al muro nord una cassa di legno carbonizzato. La cassa è alta m. 0.55, lunga m. 1.00, larga m. 0.55 e lo spessore è di m. 0.02.'

10-5-1928 A m. 2.00 dal lato est della terrazza, a m. 1.90 dall'estremità sud nel mezzo del pavimento si

⁸⁹⁸ Through the description in Maiuri 1958, 206, and our own deductions from other evidence, this room can be identified as being on the upper floor of the Casa Sannitica. This means that excavations on the upper floor of the Casa Sannitica had already been conducted in 1928, while Maiuri (1958, 59) writes that they were only begun in November 1931.

trova un quadretto a mosaico, a piccole tessere, di fine lavoro. ... [panther in centre + cornucopia] ... A m. 1.10 dal lato est, a m. 0.80 dal descritto quadretto, a m. 2.20 dalla sponda sud della terrazzina sul pavimento e tra le pietre di un muro abbattuto causa la lava di fango si è trovato: bronzo: statuetta di Mercurio (E 252); bronzo: statuetta di Venere (E 253); terracotta: figura di donna seduta (E 254); legno bruciato: parte di piede di letto (E 255) alto m. 0.10.'

Libr. trov. no. E 255, p. 49-50: 'data 9-3-28 Decumano minore, piede di mobile; lunghezza massima framm. 0.20; Descrizione: Piedi di letto, frammenti provenienti probabilmente da due piedi di letto o da spalliera di sedia'⁸⁹⁹

Scheda no. E 255: 'Provenienza: Casa N.9 Cardo V Superiore.⁹⁰⁰ Oggetto: Piedi di mobile. Stato: frammentario. Dimensioni: Lungh. Mass. framm. 0.20. Descrizione: Piedi di mobili modanati. Osservazioni: Frammenti provenienti, probabilmente, da due piedi di letto o da spalliera di sedia. Dataz. 1 sec. d. C.' Room to the north-west of the terrazza described, measuring 4.00 x 3.70 m., decoration on black base and a stucco ceiling; 11-5-1928: 'Tra il terreno che era nella stanza è stato trovato: ebano, frammenti (E 256) intagliati appartenente a piede di tavolo.'

Libr. trov. no. E 256, p. 49-50: 'Posto: Decumano Minore. Descrizione: Ebano. Frammenti intagliati appartenenti a piede di tavola.'

Scheda no. E 256 a,b,c: 'legno, gambe di tavolo. Stato: frammentarie. Dimensioni: Lunghezza max. a 0,26; b 0,075; c 0,08. Altezza max. a 0,07 b 0,04 c 0,03; Spessore max. a 0,023; b 0,025; c 0,025. Descrizione: Legno. Frammenti di tre piedi di tavolino decorati con teste di levriero. Gli altri a framm. conservazione.' *Libr. trov.* no. E 287: 'Data: 19-7-1928. Posto: Cardo IV Superiore (Casa sannitica). Descrizione: Bronzo, serrature di mobilio in parti 3 della lunghezza di 0,06 x 0,06. L'altezza è di m. 0,02.'

Scheda no. E 287: 'Provenienza: Casa sannitica, Cardo IV Superiore. Stato: pessimo. Dimensioni framm. maggiore 0,06 x 0,002. Descrizione: No. 4 Frammenti di serratura di mobilio tra cui si riconoscono la tappa e il chiavistello.'

Bed; Casa a Graticcio (III 13), first floor, room 3; Maiuri (1958, 418) describes the contents of this room which we have been unable to trace in the excavation reports: '... i residui di un letto a telaio di legno carbonizzato; ...' he also mentions household articles in bronze and terracotta, including 3 lamps and jewelry.

Bed; Casa a Graticcio (III 13), first floor, room 4; Maiuri (1958, 419) describes the contents as follows: '... avanzi di un letto. Una mensa marmorea (cartibulum).'

Cupboard; Casa a Graticcio (III 13), first floor, room 5; 24-9-1928: 'Nell'ambiente N° 3 piano superiore anche dello scavo C si è smontato un piccolo armadio che era aderente alla parete ovest.'

Cupboard; Casa a Graticcio III 14), ground floor, room 8; 27-9-1928: 'Lo sterro è stato ripreso nello scavo C, ambiente N. 5 e 6. In quest'ultimo a m. 0.54 dalla parete est poggiato sul pavimento si è trovato un armadio di legno carbonizzato, alto m. 1.17, largo m. 0.60, e profondo m. 0.47. I pilastri laterali sono larghi m. 0.06. La porta è formata a due battenti, e ciascuno è largo m. 0.26. Ogni battente è diviso in 2 riquadrature, ciascuno è larga m. 0.10, nel mezzo trovasi incastrata una tavoletta della larghezza di m. 0.06. La porta destra tiene una battita, della larghezza di m. 0.05 che si sovrappone alla porta sinistra. Il lato est - quello ovest non è ancora scavato -, è formata da una sola tavola, larga m. 0.35. A m. 0.165 dall'estremità superiore si trova una traversa di legno che serviva di sostegno della larghezza di m. 0.06. La cassa tiene la porta inferiore mancante perché attraversata da un cunicolo larga m. 1.25.' [Half a meter further on:] 'terracotta: piccola pentola (E 315); legno carbonizzato: corno (E 316).'

28-9-1928: 'Lo sterro della cassa è stato sospeso perché d'ordine superiore si deve fare il calco di gesso.'

Cupboard; Casa a Graticcio (III 13), first floor, room 5; 4-10-1928: 'Nello smontare l'armadio a muro che

⁸⁹⁹ On the basis of the excavation reports, the faulty date in the inventory list can be corrected: '9-3-1928' should be: '10-5-1928'.

⁹⁰⁰ The find spot which is given in *scheda* E 255 is incorrect, because *Cardo V* had not yet been excavated in 1928. The fragments were probably stored for a while in a storeroom or a display case in *Insula Orientalis* II 9, which might have given rise to the confusion.

si trova nell'ambiente N° 3 piano superiore dello scavo C tra il letto e la parete est del suddetto armadio sul pavimento si è raccolto: bronzo: statuetta (E 318).'

Round table; Casa a Graticcio (III 13-14), room not known; 16-10-1928: 'Nell'ambiente N. 4 dello scavo C a m. 1.05 dal muro nord, a m. 1.20 dalla parete est, a m. 0.50 di altezza dal pavimento si è trovato un tavolo di legno carbonizzato del diametro di m. 0.61. Lo spessore è di m. 0.04. E' ridotto in moltissimi pezzi. Il piede di sostegno non è stato ancora trovato.'

Cupboard (fragment); Casa dell'Erma di Bronzo (III 16), *atrium*? 19-10-1928: 'Nell'atrio N° 8 scavo C a m. 0.70 dal muro nord ed a m. 3.25 dalla parete est sul pavimento si è raccolto un piede di legno carbonizzato appartenente ad un armadio a muro. E' alto m. 0.08 e lo spessore è di m. 0.04.'

Seat? (fragments); Casa dell'Erma di Bronzo (III 16), room 5; 22-10-1928: 'Nell'ambiente N° 10 scavo C, a m. 1.40 di altezza dal pavimento della casa, a m. 1.20 dalla parete est e a m. 0.15 da quella sud nel terreno è stato raccolto: legno carbonizzato, avanzi di sedia (E 331). Le due spalliere con i piedi sono tornite. I piedi sono lunghi m. 0.24 compreso la tenuta. Le spalliere sono alte m. 0.34, la larghezza massima è di m. 0.06, e quella minima m. 0.03. L'estremità superiore ed inferiore di ogni spalliera terminano con mezzi tondi.'

Libr. trov. no. E 331: p. 63-64, 'Data 22-10-1928 Ins. III scavo C Cardo IV; descrizione: legno carbonizzato, avanzi di sedia. Le due spalliere con i piedi sono tornite. I piedi sono lunghi m. 0.24 compreso la tenuta. Le spalliere sono alte m. 0.34.'

Scheda no. E 331: 'Sedia? Prov. scavo C Cardo IV Ins. III (Casa dell'erma di bronzo; No. 9 frammenti; Dimensioni: Lunghezza mass. cons. 1: 28, 2: 25, 3: 14, 4: 8.5, 5: 8.5, 6: 9, 7: 5, 8: 4, 9: 5.5; Stato: frammentario N. 9 frammenti. Legno, N°. 9 frammenti forse di sedia torniti.'

Cupboard, *aedicula*, beds; Casa a Graticcio (III 14), first floor, room 5 (Cat.nos. 2, 3 and 27); 9-11-1928: 'Causa un temporale, l'armadio a muro che trovassi nell'ambiente N° 3 piano superiore dello scavo C una piccola parte di esso s'è rotta ed è stato raccolto: bronzo: statuetta di Giove (E 343); bronzo: statuetta dell'Abbondanza (E 344); bronzo: statuetta di Esculapio (E 345); bronzo: statuetta di Diana Cacciatrice (E 346).'

17-11-1928: 'Alla presenza del Sig. Soprintendente oggi s'è rotto il piccolo armadio a muro che fu trovato nella stanza N° 3 piano superiore dello scavo C. In esso è stato trovato: bronzo: lare (E 347); bronzo: lare (E 348); bronzo: statuetta dell'Abbondanza (E 349); bronzo: statuetta di Minerva (E 350); bronzo: statuetta di Arpocrate (E 351); bronzo: peso (E 352); bronzo: monete (E 353-357); vetro: piatto (E 358); pasta vitrea: pietra (E 360); pasta vitrea: 5 coralli (E 359).'

This *aedicula* is again mentioned by Maiuri (1958, 417) as part of the *biclinium* N. 2, Casa a Graticcio, III 13, first floor: 'A destra dell'ingresso, contro la parete, era egualmente appoggiato un altro piccolo armarium che, dalle numerose statuette di divinità che vi si rinvennero, doveva essere più particolarmente destinato ad uso di larario domestico; vi si raccolsero infatti le seguenti statuette di minuscole dimensioni e di povera e rozza arte popolare: a) due Lari; b) Giove; c) Athena pacifera; d) Esculapio; e) Statuetta di Fortuna alata con cornucopia e timone; f) altra statuetta della Fortuna senz'ali, più piccola e più rozza; g) Arpocrate; h) Statuetta di baccante.' It is clear from the excavation reports that the piece was found in another room and even in a different apartment.

19-11-1928: 'Al lato nord dell'ambiente trovassi un avanzo di letto di legno carbonizzato. La larghezza è di m. 1.00. La lunghezza attuale è di m. 0.90 <era ancora più lungo> e l'altezza è di m. 0.70. Si osservano ancora i due piedi anteriori che sono alti m. 0.50. Essi sono di forma quadrata e misurano m. 0.07 per lato. All'altezza di m. 0.70 s'innestano ad essi due traverse larghe m. 0.09 e alte m. 0.03. Due traverse si sviluppano sopra i due laterali, quella al lato est è ancora in sito e misura m. 0.185 di altezza per m. 0.02 di spessore, al lato sud è mancante, ma si nota però l'incasso nel piede che doveva racchiudere la tavola in parola. E' completamente mancante il lato nord e quello ovest. Il letto dalla parete nord dista m. 0.14 e da quella est m. 0.35. Bronzo Monete (E 362\363) Osso Nero (E 364).'

Room 5 also appears in the *Descrizione di Ambienti* of 23-2-1929: 'Ambiente N. 3. In questa stanza vi sono due letti di legno carbonizzato uno da sud a nord e l'altro da ovest ad est.'

One of the beds receives a further mention: 19-7-1929: 'Nello smontare il letto che trovassi nell'ambiente

N° 3 della casa N° 15 sotto di esso vi erano i seguenti oggetti pregiati sul pavimento: bronzo: mescolo (E 439); terracotta: vaso (E 440).'

Two beds; probably Casa Sannitica (V 1), first floor, east side; 5-12-1928: '(Terrazzina o balcone N° 4) A m. 5.80 dall'estremità nord è apparso un vano lungo m. 2.05 e termina al lato sud con un altro pilastro delle medesime dimensioni degli altri. ... A m. 0.35 dalla parete nord vi è un letto di legno carbonizzato che dista dall'estremità ovest dal balcone o terrazza N° 5 m. 0.50. Il letto piglia la direzione nord-sud ed è lungo 2.45, largo m. 1.44 compreso la larghezza dei traversoni laterali che è di m. 0.15 ciascuno. A m. 0.50 dalla lettiera nord ed a m. 0.65 da quella sud trovasi nella parte alta del letto un reticolato di legno largo m. 1.14 e lungo m. 1.14. Alle due traversine del reticolato se ne innestano altre due lunghe m. 1.17, e larghe m. 0.075 che pigliano la direzione nord-sud, ed al centro di queste ultime se ne trova una terza di m. 0.50. Questo reticolato così composto serviva per sostenere i materassi. Lo spessore dei traversoni laterali è di m. 0.06. Il legno è colorato con pittura rossa. Le lettiere sono larghe m. 0.15, però a m. 0.06 piglia la forma di guscio. A m. 0.25 dal letto descritto se ne trova un altro che si estende da ovest ad est. E' lungo m. 2.00 e largo m. 1.15. Di quest'ultimo letto solamente il lato sud è conservato in parte, il resto fu distrutto da un cunicolo. Dato che i letti si trovano sulla terrazzina e piazzati in senso opposto, può darsi che sia letti bicliniari. Nessun oggetto è stato raccolto, tranne qualche piccolo pezzo di stoffa carbonizzata.'

Two beds; probably *Insula* IV, one of the first houses along *Cardo* IV, first floor; 12-12-1928: '(nell'ambiente N° 18 dello scavo C, piano superiore) A m. 0.84 dalla parete sud, a m. 2.35 dall'estremità est a m. 2.50 dal pavimento della strada è apparsa una parte di un letto carbonizzato. Misura m. 2.10 di lunghezza per m. 0.38 di altezza. I piedi del letto sono innestati sopra 3 pezzi di legno. Il 1° è largo m. 0.11, il 2. ed il 3. sono larghi m. 0.05. I suddetti pezzi poggiano sopra un rialzo di legno a forma rettangolare alto m. 0.10, e largo m. 0.14. Al lato sud si notano due piedi, uno tornito, e l'altro a forma di pinolo e distano l'uno dall'altro m. 0.14. Essi sono alti m. 0.23. Il traversone est è largo m. 0.135, a m. 0.34 dalla lettiera sud ed a m. 0.36 da quello nord si osservano ... traverse che vanno da est ad ovest, larghe m. 0.085 larghezza attuale, le 2 laterali, e m. 0.10 quella centrale. Sia le 2 traverse laterali che quella centrale sono attaccate ad un'assicella che è piazzata da sud a nord - lunga m. 0.18 e larga m. 0.07. Doveva essere un reticolato che serviva per mantenere gl'indumenti del letto. Esso piglia la direzione sud-nord. Un secondo letto trovasi in senso opposto al primo e cioè da ovest ad est. Non è ancora sterrato.'

9-1-1929 Il 3° letto accennato il giorno 12.12 s.a. è stato sterrato. E' lungo m. 2.00 e largo m. 1.10. Al lato nord aderente alla parete vi è la lettiera alta attualmente m. 0.30, però per m. 0.09 all'estremità inferiore è a forma di guscio ed è colorata in rosso. Il letto si solleva dal pavimento per m. 0.38. I piedi in N° 2 sono torniti e colorati in rosso. I traversoni laterali sono larghi m. 0.13 x 0.05.'

Beds; Casa a Graticcio, III 14, ground floor, rooms 2 and 3; 18-12-1928: 'Altri 2 ambienti, e cioè N° 5 e 5 bis piano terreno anche dello scavo C sono stati sterrati. ... L'altro ambiente è largo m. 2.05, e lungo m. 3.45 ... A m. 2.30 dalla soglia, aderente alla parete sud dell'ambiente è stato trovato un'avanzo di letto di legno carbonizzato, lungo m. 1.10, lunghezza attuale le traverse laterali sono larghe m. 0.12 e lo spessore è di m. 0.035. La lettiera è alta m. 0.43. Il letto è sollevato dal pavimento per m. 0.30.'

The bed also appears in the *Descrizione di Ambienti* of 23-2-1929: 'Vestibolo ... Sulla parete destra vi sono due vani, il primo mena in un piccolo ripostiglio ed il 2° che trovasi all'estremità, nell'ambiente N° 5. In quest'ultimo ambiente aderente alla parete sud fu trovato un'avanzo di letto di legno carbonizzato.'

The bed in room N. 2 is again mentioned by Maiuri (1958, 415): 'I resti di un letto in legno che si rinvennero addossati alla parete di fondo, attestano che questo ambiente dovè essere destinato a rustico cubicolo e forse anche all'esercizio di qualche umile mestiere da parte di chi l'abitava.'

Bed (fragment); probably Casa della Fullonica (IV 5-7), first floor; 21-12-1928: 'Nello scavo del II° Cardine, all'inizio dello sterro di un'altra terrazzina a balcone è apparso: bronzo, parte di letto di legno rivestito di bronzo (E 392).'

Libr. trov. no. E 392, p. 71-72: 'Data 21-12-1928; (Ins. III?) IV Cardine. Parte di letto rivestito di bronzo, lungo m. 1.00; inserita nel letto ora nella Casa del tramezzo di legno. ALJL 6-6-1984.'

Scheda no. E 392: 'In situ. Lungo m. 2.30 alto m. 0.39. I piedi di bronzo contengono ancora nella parte interna il legno carbonizzato. Essi sono ben conservati. La larghezza delle lastre di bronzo è di m. 0.04. Il

letto distava dall'estremità della terrazzina per m. 0.55.'

Evidence for a bed; Casa a Graticcio, bottega III 15; 3-1-1929: 'Lungo il Cardine N° 2 è incominciato lo svuotamento del vano N° 15. Al lato sinistro nel muro è apparso l'incavo di un letto. Del legno nessuno traccia perché è stato completamente distrutto da un cunicolo alto m. 1.75 e largo m. 0.95 che rasentava la parete.'

Work bench; Casa a Graticcio, III 14, ground floor, room 7; the piece is described as a bed in the *Descrizione di Ambienti* of 23-2-1929: 'Dal N° 11 mediante un vano alto m. 2.05 e largo m. 0.69 si entra nel N° 10. Al lato nord di quest'ambiente fu trovato ed è ancora in sito un'avanzo di letto o di tavolo di legno carbonizzato.'

Maiuri (1958, 414) later raised doubts about identifying the piece as a bed and regarded it as a table or a combination of bench and chest: 'A stanze di lavoro dovevano essere infatti adibiti gli ambienti N. 7-8; poiché, innanzi alla grande finestra che si apre sul cortiletto, si rinvennero gli avanzi di un pancone in legno che, non potendo per la stessa sua altezza dal suolo, venire identificato per un letto, doveva piuttosto essere un tavolo o una cassapanca.'

Bed (fragment); Casa dell'Ara Laterizia, III 17, room 3; 10-4-1929: 'Il vano N° 5 porta in un cubicolo largo m. 1.94 x 2.85. Sulla parete nord si vede l'incasso di un letto. Molti frammenti di esso di legno carbonizzato furono raccolti.'

Two appliqué for *fulcra*, bronze bed appliqué: Casa dell'Atrio a Mosaico (IV 1-2), first floor; *Libr. trov.* no. E 429 p. 85-86: 'Data 15-6-1929; Cardo IV, Ins. III; Bronzo, testa di asino che serviva come spalliera di letto.'

Scheda no. E 429: 'Bronzo, applique ad alto rilievo con protome di mulo di tre quarti a destra; la testa, le orecchie e la criniera sono a tutto tondo. Sul collo è rappresentato il pectorale decorato da una doppia fascia a meandri in argento.'

Libr. trov. no. E 430, p. 85-86: 'Data 15-6-1929; Cardo IV, Ins. III; Bronzo, testa di oca che serviva come spalliera di letto.'⁹⁰¹

Scheda no. E 430: 'Provenienza: Cardo IV Ins. IV, Casa dell'atrio a mosaico. Stato: Molto corrosivo, mancante di piccoli frammenti. Dimensioni: Larghezza max. 8; Altezza 10,2; Spessore 4. Descrizione: Bronzo - Applique a testa d'oca con {...} del collo rese a linee parallele.' A pencil note here gives 'Casa dell'alcova' as the find spot. This is incorrect.

Bed (fragment); probably Casa dell'Atrio a Mosaico (IV 1-2), first floor; 25-6-1929: 'Nell'ambiente N° 4 piano superiore della casa N° 8 è stato raccolto a m. 1.30 dalla parete est, ed a m. 0.80 da quella nord: bronzo, parte di letto (E 433). Sopra essa si osservano a rilievo delle palmette con foglio di acanto e alle due estremità ghirlandi di fiori {...} o di festoni. Tra una palmetta e l'altra un ovolo anche di argento con delle lamine di oro. Lunga m. 0.45 e larga m. 0.031. Sopra essa si notano a rilievo delle palmette con foglie di argento e alle due estremità ghirlandi di fiori poste a festoni. Sotto la palmetta un disegno inciso a forma di volute. Tra una palmetta e l'altra un ovolo anche di argento con delle lamine di oro?'

Libr. trov. no. E 433, p. 85-86: 'Data 25-6-29; Cardine IV, Ins. III; Casa N°. 8 Giardino Atrio? Descrizione: Bronzo. Parte di letto lungo m. 0.45 e largo m. 0.031. Sopra essa si osservano a rilievo delle palmette con foglio di argento e alle due estremità ghirlandi di fiori {...} o festoni. Tra una palmetta e l'altra un'ovolo anche di argento con delle lamine di oro. ...'

Two beds; Casa dell'Alcova (IV 3-4), ground floor, room 19 (Cat.no. 6); 16-7-1929: 'Nell'ambiente N° 10 della Casa N° 6 a m. 0.75 dalla parete nord è stato scavato un avanzo di letto di legno carbonizzato. E' situato da est ad ovest ed è attualmente lungo m. 2.10 ed alto m. 0.21. Il traversone laterale è largo m. 0.15 ed alto m. 0.04. La lettiera che è conservato solamente al lato est è alto m. 0.33 e lo spessore è di m. 0.015.

⁹⁰¹ Inv. E 429 is also mentioned by Boube-Piccot (1975, 374 nr. A 80) and Faust (1989, 174 Kat. 128). Both incorrectly give the Casa del Bel Cortile as the find spot and 1934 or 1939 as the year of the find.

A m. 0.29 dall'estremità est dalla parete interna vi è un reticolato di traverse di legno carbonizzato della larghezza di m. 0.35 quelle esterne, e di m. 0.14 quelle al centro. Esse distano tra loro m. 0.13. Le traverse centrali sono incastrate in un'altra traversa laterale larga m. 0.07 mentre quelle esterne sono fissate nei traversini laterali.'

17-7-1929: 'Un altro letto nello stesso ambiente di ieri è stato posto alla luce. Esso s'innesta ad angolo retto al primo e cioè da nord a sud e dista dalla parete ovest m. 0.37. E' lungo m. 2.33 e largo m. 1.20 (le medesime misure doveva avere l'altro letto). Di questo secondo letto è conservato solamente il traversone lato est che è largo m. 0.145 e lo spessore è di m. 0.05 e la traversa al lato sud. Quest'ultimo tiene le medesime dimensioni del traversone, i piedi sono torniti. Il legno del letto è dipinto in rosso.'

The beds are also mentioned in the *Descrizione di Ambienti* of 2-12-1929: 'L'ambiente N. 10 è il più bello e più grande il quello finora scavato. Doveva essere un biclinio a giudicare dalla disposizione dei due letti di legno carbonizzati trovati e rimasti in sito (descrizione fatta i giorni 16-17 luglio 1929); misura 4.38 x 4.46 m.'

Bed; Casa dell'Alcova, IV 4, ground floor, room 1; 16-9-1929: 'L'ambiente N. 3 della casa N. 6 è un cubicolo. Il letto di legno carbonizzato è situato da est ad ovest e dista m. 0.20 dalla parete nord. Attualmente è lungo m. 1.08 perché rotto da un cunicolo e largo m. 0.96. I traversoni principali sono larghi m. 0.14 e lo spessore m. 0.05. Esso è rialzato dal pavimento per m. 0.30. I traversoni secondari, e cioè quelli che sostengono la spalliera sono larghi m. 0.05. La lettiera è alta m. 0.55. Al centro del letto vi è un reticolato di traverse di m. 0.085 di spessore. La sua forma è del tutto uguale agli altri sterrati fino ad ora. L'ambiente è largo m. 2.00 e lungo m. 2.75 ... Sul pavimento dell'ambiente è stato raccolto: terra cotta: lucerna (E 458); terra cotta: orcina (E 459); terra cotta anforetta (E 460); stoffa: 3 pezzi (E 461).'

The bed also appears in the *Descrizione di Ambienti* of 2-12-1929: 'L'ambiente N° 3 è un cubicolo. Aderente alla parete nord vi è ancora un avanzo di letto carbonizzato (m. 2 x 2.75; descrizione fatto il 16-9-29).'

Wooden table of shelf?; find spot unknown; 31-10-1929: 'In quella [casa] N. 2 ambiente N. 1 sopra un tavolo di legno mal conservato, trovato sul pavimento è stato raccolto: terra cotta: coppetta (E 469); terra cotta: piccola palmetta o foglia (E 470).'

Bronze appliqué for furniture; Casa dell'Atrio a Mosaico (IV 1-2) or Casa dei Cervi (IV 21), first floor; *Libr. trov.* no. E 498: 'Data 1-4-1930. Provenienza: Casa dell'atrio a mosaico o quella dei Cervi. Ins. IV piano superiore. Stato: buono. Dimensioni: Lunghezza m. 0,12; Altezza m. 0,06; Descrizione: bronzo, Elemento facente parte probabilmente di una decorazione di mobile o altro.'

Chest; Casa dei Cervi (IV 21), first floor; 21-10-1930: 'Nell'ambiente N. 45 piano superiore ... Sul pavimento dell'ambiente vi era una cassa di legno carbonizzato completamente rotta. Dalla cassa sono stati estratti i seguenti oggetti: terra cotta: vaso (E 545); terra cotta: orcio piccolo (E 546); terra cotta: pentola (E 547); terra cotta aretina: vaso (E 548); terra cotta: Lagena biansata (E 549); terra cotta aretina: piatto (E 550); terra cotta: piatto (E 551); id. (E 552); terra cotta: vaso tipo aretino (E 553); terra cotta: lampada (E 554); id. (E 555); id. (E 556); id. (E 557); id. (E 558); terra cotta: lucerna (E 559); terra cotta: urceo piccolo (E 560); id. (E 561); id. (E 562); id. (E 563); terra cotta colorata: vaso (E 564); terra cotta: vaso tipo aretino (E 565); terra cotta: piatto (E 566); osso: corno (E 567); osso nero: rotelle di fuso N. 3 (E 568) del diametro di m. 0.04.'⁹⁰²

Wall rack?; Casa dei Cervi (IV 21), ground floor, room 3; 24-11-1930: 'L'ambiente N. 4 della casa N. 1 sul 3° Cardine è stata svuotata. Misura 2.56 x 4.25. Sulla parete sud tiene due vani. Il primo misura mt. 0.90 x 2 e mena dell'atrio della casa ed il secondo trovasi a mt. 0.64 dal primo e misura mt. 0.60 x 2. Sulla parete est a mt. 2.52 dal pavimento dell'ambiente vi è una finestrina larga mt. 0.95, l'altezza manca perché il muro in detto sito è abbattuto. Aveva il piano superiore il cui solarino poggiava sopra 9 travi di legno. Essi erano posti da est a ovest. ... Molti oggetti di terracotta e di vetro sono stati raccolti in questo ambiente. Essi erano chiusi in parecchie cassette di legno di dimensioni varie che erano attaccate con due chiodi alla parete

⁹⁰² Cf. Tran Tam Tinh 1988, 11-12 and 110 and De Kind 1992, 239.

nord.'

In the *Descrizione di Ambienti* it says of room 3: 'Moltissimi frammenti di terracotta e di vetro furono raccolti nell'ambiente. Essi dovevano essere conservati in più cassette di legno che erano attaccate alla parete nord. Ancora si osservano le testate dei chiodi di ferro che tenevano sorprese le cassette. Dati detti trovamenti l'ambiente non era che un ripostiglio.'

Racks, evidence for bed; Casa dei Cervi; in the *Descrizione di Ambienti* for the Casa dei Cervi there are observations concerning three rooms which indicate that wooden furniture was originally present:

1. 'Ambiente 18 (1.79 x 2.10 m.) A m. 1.90 di altezza dal pavimento sulla parete ovest vi sono tre fori uno di esso contiene ancora nell'interno il legno carbonizzato. Anche sulla parete est a mt. 1.20 dal pavimento vi sono tre buchi più piccoli delle dimensioni di mt. 0.07 x 0.07.'
2. 'Ambiente 21 (3.15 x 2.80 m.) Estremità ovest dell'ambulacro N. 20 Lato sud. ... Nell'angolo della parete sud-ovest vi è un incavo profondo mt. 0.12 e largo mt. 1.42 che serviva per metterci il letto.'
3. 'Ambiente 26 (1.33 x 3.30 m.) L'ambiente doveva servire come ripostiglio, sia perché in esso vi fu raccolte stoviglie di cucina ed anfore, e sia perché aderente alla parete nord vi erano delle tavole di legno sostenute da chiodi di ferro conficcati nella parete ovest ad est.'

Evidence for beds; Casa del Gran Portale (V 34-35), room 1; the house was excavated between 10-10-1931 and 4-1-1933. We have only been able to trace the *Descrizione di Ambienti* for this event. Its account includes the following: 'Ambiente N° 7. ... A m. 0.30 da questo vano sulla parete, parte bassa, vi è un incavo lungo m. 2.40 profondo m. 0.14 ed alto m. 0.40. Anche nella parete opposta vi è il medesimo incavo. Tanto fa supporre che l'ambiente era usato anche come triclinio, ed i letti tricliniari o bicliniari erano fatti di tavole di legno, le cui testate erano poggiate negli incavi positamente aperti nella parete frontale. L'altra estremità doveva essere inchiodata su traversoni i quali potevano essere sostenuti da più piedi e della medesima materio o di ferro. Ma tutto questo si suppone perché nessuna traccia né di tavole e né di piedi è stato trovato, dato che le pareti erano rasentate da cunicoli alti m. 1.90 e larghi m. 0.97.'

Wax tablets are mentioned four times in the inventory list of the Magazzino Archeologico for the years 1931 and 1932. In view of the fact that the other wax tablets were found in chests which were not referred to in the inventory list, it might be assumed that these wax tablets were also found in chests:

1. *Insula IV 15: Libr. trov. no. E 683, p. 145-146*: 'Data 25-11-1931; Casa N° 4, IV Cardine Ins. IV presso l'incrocio del Decumano Inf. e IV Cardo. Termopolio. Legno carbonizzato. Tavolette per tritici poste l'una sopra l'altra.'
2. *Libr. trov. no. E 729, p. 165-166*: 'Data 10-3-32; Casa N° 18, Cardo IV Ins. IV. Legno, tavolette.'
3. *Libr. trov. no. E 883, p. 781-782* [errore con numeri delle pagine]; data 6-7-32; III Cardine Lato nord, Legno, Tavolette.'
4. Casa del sacello di legno: *Libr. trov. no. E 968, p. 801-802*: 'Data 23-12-1932; Casa N° 2, 5° Cardine Lato ovest (del sacello) Legno tavolette.'

Racks; Taberna IV, 15-16; Maiuri (1958, 434); 1931 or 1932: 'E' la più grande e più ricca bottega scoperta finora ad Ercolano ed è da dolersi che le molte perforazioni dei cunicoli, svuotandola delle sue suppellettili e delle sue scansie in legno non ce ne abbiano un aspetto altrettanto integro quanto quello della bottega della Casa del mosaico di Nettuno e Anfitrite ...' It is not however clear from the description whether remains of racks were actually found.

Cupboard or chest?; Casa del Telaio (V 3-4), room a'; because this room was excavated in 1931 or 1932, Maiuri (1958, 428) is our only source: '... della seconda [sc. stanzuccia] (a'), ..., si fece probabilmente un' apotheca e le impronte rimaste nel banco di fango indurito possono far pensare alla presenza di un'armadio o di un'arca.'

Bed; Casa del Telaio (V 3-4), room H; 5-1-1933: 'Nella Casa N° 4 posta sul IV° Cardine, lato est è stato sterrato l'ambiente N° 8, a sud del peristilio. E' a forma rettangolare e misura m. 2.80 di lunghezza per m. 2.43 di larghezza. ... Sulla parete sud vi è un incavo di letto di legno carbonizzato. L'altezza è di m. 0.34 e la larghezza di m. 1.30. La lunghezza non può segnarsi perché l'estremità nord è rotta da un cunicolo.'

Recess for bed; Casa del Mobilio Carbonizzato (V 5), room 4; 7-1-1933: 'In quella N° 5 sul IV Cardine, lato est è stato completato il lavoro di sterro del tablino N° 6 (3.58 x 4.23 m.). ... Nell'angolo nord-est vi è un incavo per letto (?) alto m. 0.73.'

Rack; Casa del Mobilio Carbonizzato (V 5), room 7; we have been unable to find the room in the excavation reports. Maiuri (1958, 260) describes it and says of the finds: (Maiuri 1958, 472 nt. 56) 'La suppellettile in terracotta, bronzo e vetro era depostata su una scansia in legno a quattro ripiani.'

The above-mentioned Ambiente 10 appears in the *Descrizione di Ambienti* for the house as Ambiente N° 12: 'Sulla parete ovest vi è un incavo di letto alto m. 0.70 e profondo m. 0.18. ... L'ambiente prima era un cubicolo e poi fu trasformato in ripostiglio tanto vero che aderente alla parete nord ed est vi erano delle scansie di legno e sopra ad esse si poggiavano molti oggetti di terracotta che a suo tempo furono raccolti.'

Recess for bed: Casa del Mobilio Carbonizzato (V 5), room 3: '... Ambiente N° 10 (2.26 x 2.80 m.) ... Sulla parete ovest vi è un incavo di letto alto m. 0.70 e profondo m. 0.18.'

Amphora rack; Casa di Nettuno ed Anfitrite, bottega V 6 (Cat.no. 31); 1-2-1933: 'Nella Casa N° 6, posta sul IV° Cardine, lato est, nell'ambiente N° 1, che è un magazzino, a m. 2.50 dal vano d'ingresso ed a m. 1.90 d'altezza dal pavimento vi è un ammezzato di legno carbonizzato chiuso dalla parte anteriore da transenne di legno. ... Sulla parete sud poi vi sono delle scansie larghe m. 0.85. I traversoni che partono dalla parete sud per sostenere le tavole sono di m. 0.04 x 0.06, le tavole di m. 0.02. La parte anteriore era chiusa da altre tavole per l'altezza, quella attuale di m. 0.19 e dello spessore di m. 0.02. Gli stipiti di ogni scomparto sono larghi m. 0.07 e dello spessore di m. 0.04. Il vuoto è di m. 0.38 di altezza.'

The room is also described in the *Descrizione di Ambienti*: 'Amb. N. 1: ... Un bellissimo termopolio ... Mai un ambiente così completo con i suoi stipiti di legno carbonizzato conservando ancora la positura primitiva delle anfore, un ammezzato anche di legno, vari fornelli con gli oggetti in sito ed i suoi banchi di vendita con dolij pieni di cereali può ammirarsi in altri scavi. L'ambiente è a forma rettangolare e misura m. 5.35 di larghezza per m. 4.21 di lunghezza. ... Sulla parete sud vi sono delle scansie larghe m. 0.85.'

Table; Casa del Mobilio Carbonizzato, room 8 (Cat.no. 15); 9-2-1933: 'Nella Casa N° 5 sul 4° Cardine, lato est, ambiente 8, sul pavimento a m. 1.40 dalla parete sud ed a m. 2.15 da quella est è stato raccolto: terracotta: lucerina (E 1006).'

10-2-1933: 'Nella Casa N° 5, sul 4° Cardine, lato est, ambiente 8 nell'angolo nord est, si va sterrando un trapezoforo di legno con piedi sagomati e tavolo circolare. A sterro ultimato si marcheranno le misure necessarie.'

Chest; *Insula Orientalis* II 7, first floor; 14-2-1933: 'Sul piano superiore della Casa N° 7, V° Cardine, lato est, in una cassa di legno completamente rotta perché attraversata da un cunicolo nel terriccio è stato raccolto: terra cotta: lucerna (E 1017); terra cotta: coppetta (E 1018); vetro: recipiente (E 1019).'

Appliqué for furniture; Casa di Nettuno ed Anfitrite (V 6-7), first floor; 28-2-1933: 'Sul solaio del piano superiore interno, non ancora enumerato, della Casa N° 6, sul IV° Cardine lato est, a m. 1.20 dalla parete sud ed a m. 1.75 da quella ovest si è raccolto: bronzo: ornamento di spalliera di letto (?). E' una donna seduta che stringe con la mano sinistra una lira e con la destra si accinge a suonare - L'altezza è di m. 0.08 (E 1031).'

Bed and table; Casa del Mobilio Carbonizzato (V 5), room 8 (Cat.nos. 7 and 15); 2-3-1933: 'Nell'ambiente N° 8, della Casa 5, sul 4 Cardine, lato est, si sta mettendo alla luce un bellissimo letto di legno carbonizzato - A quanto pare di forma diversa degli altri trovati fino ad oggi.'

9-3-1933: 'Nell'ambiente N° 8, della Casa N° 5, posta sul IV Cardine, lato est, è stato svuotato il letto accennato il giorno 2 c.m. Dista dalla parete ovest m. 1.30 ed aderisce a quella nord. - E' lungo m. 2.24, è largo m. 1.25. Le due traverse principali che sono all'estremità laterale sono di legno policromo larghe m. 0.13 e dello spessore di m. 0.05. Le lettiere sono alte m. 0.60 - Il letto si solleva dal pavimento di m. 0.30 ed è sostenuto da otto piedi, quattro all'estremità ovest e quattro ad est. Ogni piede dista l'uno dall'altro

m. 0.22. Quelli estremi e precisamente ai 4 angoli sono torniti e gli altri si presentano a forma circolare. Il reticolato centrale del letto è formato da sette traverse, il tutto della lunghezza di m. 1.17 e m. 0.67 di larghezza. - Le traverse esterne sono larghe m. 0.07, quelle centrali m. 0.13. Sopra il reticolato di legno poggia un reticolato fatto di corda e nastro a forma rettangolare di m. 0.025 di larghezza per m. 0.022 di altezza. Il nastro è largo m. 0.025. La distanza che passa dal reticolato al traversone del letto è di m. 0.15 - Sulla spalliera est vi è avvolto avanzi di tessuto - Nessun trovamento.'

31-3-1933: 'Il tavolo di legno carbonizzato che trovai nell'ambiente N° 8, della casa N° 5, sul IV Cardine, lato est è stato sterrato - Misura m. 0.41 di diametro e m. 0.65 di altezza. L'estremità inferiore termina con zampe di Leone. Con questo trovamento e con lo svuotamento del suddetto ambiente la Casa è completamente svuotata.'

Room 8 of the Casa del Mobilio Carbonizzato also appears in the *Descrizione di Ambienti*: 'Dalla decorazione delle pareti e dalla sua forma fa supporre che è un triclinio. Misura m. 4.10 di larghezza per m. 5.25 di lunghezza. ... Aderente alla parete nord vi era un letto di legno (descrizione fatta il giorno 9-3-33) ed altri frammenti anche di letto erano all'estremità est del primo, perciò poteva essere un triclinio o biclinio. Nell'angolo nord-ovest fu sterrato il giorno 21-3-33 [= 31-3-33] un tavolo di legno.'

Libr. trov. (numbered in pencil) 1: 'Collocazione Casa del mobilio carbonizzato. Descrizione: Legno, Tavolino rotondo (mensola) a tre piedi terminanti a zampe di levrieri. Prov. incerta. A. m. 0,64, Diam. m. 0,040. Stato: discreto, è carbonizzato ed in parte ricostruito.'

Libr. trov. (numbered in pencil) 2: 'Collocazione Casa del mobilio carbonizzato. Descrizione: Legno: letto rettangolare fornito di tre sponde alte; poggia su tre piedi moderni. Provenienza: incerta (mis. ricostruite) Lu. m. 2,20; La. m. 1,20; Alt. m. 0,40 (letto), con le sponde m. 0,97. Stato: carbonizzato e ricostruito da vari pezzi.'

Scheda (not numbered): 'Cassetta L/M L/1 data rev. Febbraio 1982. Collocazione Ex Casa del mobilio carbonizzato. Oggetto: 2 piedi di letto, Alt. 20. Stato di conservazione: Integri, carbonizzati. Descrizione: Legno - 2 piedi di letto modanati, appartenente al letto ora conservato nella Casa del mobilio carbonizzato e asportati per sicurezza il 16-12-1972. Osservazioni: il letto rinvenuto nello scavo della Casa del mobilio carbonizzato non è mai stato inventariato.'

Bed; find spot unknown; 16-5-1933: 'Nella Casa non ancora enumerata accennata il 12. Maggio corr. mese in un ambiente al piano superiore è stato raccolto: bronzo: candelabro alto m. 1.25 (E 1087) ... Nello stesso ambiente vi è un letto di legno carbonizzato. E' lungo m. 2 e largo m. 1.15 ed alto m. 0.45. Le lenzuola sono policromate rosse con disegno di greca e quadrati.'

18-5-1933 'Nel piano superiore dell'ambiente ove il giorno 16 c.m. fu sterrato il letto è stato raccolto: bronzo: candelabro (E 1089); terracotta: fruttiera (E 1090); terracotta: piccolo vaso (E 1091); terracotta anforetta (E 1092).'

Bed legs; Casa di Nettuno ed Anfritrite (V 6-7), *triclinium* 7 (Cat.no. 8); 9-6-1933: 'Nell'ambiente N° 7 della Casa N° 6, posto sul 4° Cardine, lato est, si sono raccolti dei frammenti di letto di bronzo. I piedi, uno è quasi intero e l'altro è ridotto in minuti pezzi sono alti m. 0.30 ed i traversoni laterali che erano riempiti di legno misurano m. 0.04 di larghezza, m. 0.03 di altezza e m. 0.004 di spessore. Pochissimi frammenti di questi ultimi se ne sono raccolti.'

Appliqué for a *fulcrum*; probably *Insula* V 26; 27-7-1933: 'Continua la sistemazione delle scarpate sul V° Cardine, lato nord. Nel Vano N° 8 del suddetto cardine, lato ovest a m. 0.50 dalla soglia ed a m. 1.24 dalla parete sud sul pavimento è stato raccolto: bronzo: spalliera di letto a forma di cavallo (E 1118); terracotta: fittile panciuto (E 1119).'

Libr. trov. no. E 1118, p. 935-936; data 27-7-33; Cardo V dell'Ins. Or. II Casa 8; Descrizione: Bronzo. Spalliera di letto a forma di cavallo. E' lungo m. 0,28. La testa misura m. 0,08 x 0,05.'

Scheda no. E 1118: 'Provenienza: Cardo V Superiore, Ins. Or. II, bottega no. 8. Stato: integro. Dimensioni: Lunghezza mass. m. 195; Larghezza base m. 0,098; Altezza mass. m. 0,115. Descrizione: Bronzo - Applique di letto ad altorilievo con protome equina. Testa finemente modellata con un'abbondante e mossata criniera. Provenienza: Casa N° 8 Ins. Or. II Cardo V. Lunghezza mass. m. 0,195, Larghezza base m. 0,098 Altezza max. m. 0,115; Stato: integro. E' lunga m. 0,28, la testa misura m. 0,08 x 0,05. La criniera è arruffata e

la bocca è socchiusa.⁹⁰³

Cupboard; probably V 27; 2-11-1933: 'Sul piano superiore della Casa N° 7, posta sul V° Cardine, lato ovest, in un ambiente non ancora numerato, perché in corso di sterro, in una cassa di legno mal conservata, larga m. 0.45, alta m. 0.80 e profonda m. 0.40 vi erano i seguenti oggetti: vetro: ariballo (E 1152); vetro: bottiglia (E 1153); terracotta grezza: urceo (E 1154); id. (E 1155); terracotta: pentola (E 1156); id. (E 1157); terracotta: bicchiere (E 1158); id. (E 1159); id. (E 1160); terracotta: fittile (E 1161); bronzo: mortaio per pestare conserve (E 1162); vetro: unguentario (E 1163); pasta vitrea colorata: no. 20 astragali (E 1164); pasta vitrea colorata: no. 22 coralli (E 1165); osso nero: no. 2 dati (E 1166); frutta: no. 10 sorbe (E 1167); bucchero: piatto (E 1168). La cassa era a m. 1.95 di altezza dal pavimento, a m. 1.25 dal pilastro sud di un pozzo di luce ed a m. 2.37 dalla parete est. Le parti della Cassa erano dello spessore di m. 0.023 e le tavolette di ogni scomparto, dato che ne aveva due, erano dello spessore m. 0.021.'

Bed (fragment); Casa dell'Atrio Corinzio (V 30), room 11; 16-11-1933: 'Nel tablino N° 11, della Casa N° 4, V Cardine, lato ovest, aderente alla parete ovest, a m. 1.30 da quella nord vi è un avanzo di letto carbonizzato. La sua lunghezza è di m. 2.05 e la lettiera è alta m. 0.60. Il traversone è dello spessore di m. 0.07 x 0.09 - Sia la larghezza che la parte centrale non è possibile segnalarla perché il tutto era attraversato da due cunicoli.'

The room also appears in the *Descrizione di Ambienti*. Here the remains of three beds are mentioned: 'Ambiente N. 11. Tiene due vani, il più grande misura m. 2.17 di larghezza e m. 2.75 di altezza ... E' il più largo ambiente della casa e serviva come triclinio perché in esso furono sterrati avanzi di tre letti di legno carbonizzato ed un candelabro di bronzo posto a piede di un letto.'

Table; Casa dell'Atrio Corinzio (V 30) (Cat.no. 18?); a table is also mentioned in the *Descrizione di Ambienti* for the end of 1933: 'Gli oggetti di maggior rilievo raccolti sono: un tavolo di marmo, uno di legno, ...'

Appliqué for a *fulcrum*; Casa della Gemma (*Insula Orientalis* I 1), first floor; 27-2-1934: 'In un ambiente del piano superiore appartenente alla Casa posta all'estremità sud del V° Cardine, lato est, a m. 1.37 dalla parete ovest, a m. 0.82, da quella nord ed a m. 0.27 di altezza dal pavimento è stato raccolto: bronzo: campanello di forma rettangolare (E 1213); bronzo: testa di oca che serviva come pomo di letto (E 1214), tiene una forte incrostazione, misura m. 0.10 di lunghezza.'

Libr. trov. no. E 1214, p. 961-962: 'Data 27-2-34; Casa all'estremità del 5° Cardine lato est. Bronzo: applique.'

Scheda no. E 1214: 'Applique; Provenienza: Casa della gemma, piano superiore; Cardo V, Ins. Or. I; Dim. Largh. max. 10.5; Alt. max. 14.5; spess. max. 6; Stato: integra, incrostata e corrosa. Descr. Applique di mobile a collo e testa d'oca.'

Table/ cupboard-*aedicula*/ bed/ chest; Casa del Sacello di Legno (V 31, ground floor, room 2 and first floor) (Cat.no. 29); 2-3-1934: 'Riassunto di lavoro: ... Anche nella Casa N° 3 sullo stesso (=V) Cardine lato ovest, nell'ambiente N° 8, nell'angolo sud-est è stato sterrato un tavolino di legno carbonizzato ed un armadio di legno fatto ad ara votiva in alto ed una cassa con più scomparti nella parte bassa. Molti oggetti vi erano nella parte interna e fra essi un bollo di bronzo ed un leone di terra cotta patinato in bronzo con il nome del fabbricante. Il nome è greco. Nel piano superiore interno, e precisamente nell'ambiente posto sopra il corridoio di servizio, sotto ad un letto di legno, vi era una piccola cassetta della stessa materia con molte tavolette cerate. Parecchi frammenti se ne sono ricavati.'

Cupboard-*aedicula*; Casa del Sacello di Legno (V 31, ground floor, room 2); 13-3-1934: 'Casa 3: sopra al pavimento a m. 0.45 dalla parete sud ed a m. 1.24 dal vano d'ingresso si è raccolto: bronzo: strigile (E 1223); bronzo: forma di pasticceria (E 1224); bronzo: id. (E 1225); vetro: coppetta (E 1226); terracotta:

⁹⁰³ The piece is also mentioned by Boube-Piccot (1975, 374 nr. 79) and Faust (1989, 174 Kat. 130). Both incorrectly give the find spot as *Insula Orientalis* II 8.

coppetta (s.n.); bronzo: coppa (E 1227).'

17-3-1934: 'Nell'ambiente N° 8, della casa N° 3 posta sul V° Cardine, insula Meridionale, lato ovest, in un armadio di legno, sul ripiano superiore vi erano i seguenti oggetti: vetro: bottiglia (E 1237); vetro: bottiglia (E 1238); bronzo: statuetta di Ercole nudo (E 1239); bronzo: bollo (E 1240); terracotta policromata nera: Coppetta (E 1241); terracotta grezza: maschera comica (E 1242).'

19-3-1934: 'Si è ripigliato il lavoro nella Casa N° 3, posta sul V° Cardine, lato ovest, insula Meridionale, ambiente N° 8. Nel ripiano inferiore della cassa di legno accennata il giorno 17 c.m. si sono raccolti i seguenti oggetti: terracotta aretina: lucerna (E 1243); id. (E 1244); id. (E 1245); id. (E 1246); vetro: bottiglia (E 1247); vetro: unguentario (E 1248); vetro: bicchiere (E 1249); vetro: unguentario (E 1250); id. (E 1251); id. (E 1252); vetro: bicchiere (E 1253); vetro: unguentario (E 1254); vetro: askos (E 1255); terracotta: lucerna (E 1256); terracotta aretina: coppetta (E 1257); terracotta: bicchiere (E 1258); marmo bianco: mortaio (E 1259); terracotta patinata in bronzo: Leone con basetta (E 1260); osso N° sei dati (E 1261); bronzo: moneta (E 1262); id. (E 1263); bronzo: parte di anello con il seguente monogramma (E 1264); spalinata di calce bianca: fruttiera (E 1265); osso bianco: astragoli N° trenta (E 1266); osso nero: astragoli N° quaranta (E 1267). L' oggetto in legno era fatto a tempio la parte alta, ed a cassettoni quella bassa. Non appena restaurata sarà fatta una descrizione minuta e si piglieranno le misure necessarie.'

Cupboard; Casa della Gemma (Cat.no. 38); 22-3-1934: 'Nell'ambiente che trovasi a nord del vestibolo della Casa posta all'estremità sud, del V° Cardine, lato est, sulla parete nord, a m. 1.40 di altezza dal pavimento ed a m. 0.45 dalla parete est, vi è una scansia a muro, chiusa da una piccola porticina di legno dello spessore di m. 0.011. La scansia misura m. 0.60 di altezza, m. 0.46 di larghezza e m. 0.20 di profondità. Nell'interno vi erano i seguenti oggetti: vetro: ariballo (E 1270); vetro: unguentario (E 1271); terracotta: brocchetta panciuta e ansa costolata (E 1272); bronzo: scatolino a forma rettangolare, lungo m. 0.05 largo m. 0.03 ed alto m. 0.02. Nell'interno vi sono 20 astragali (E 1273); bronzo: patina (E 1274).'

The room is also described in the *Descrizione di Ambienti* for the Casa della Gemma: Ambiente N° 3 ... (2.85 x 3.40 m.) ... Sulla parete nord a m. 1.40 di altezza dal pavimento ed a m. 0.45 dalla parete est vi è un armadiolo a muro. - Esso era chiuso da una porticina di legno carbonizzato dello spessore di m. 0.011. L'armadiolo misura m. 0.60 di altezza, m. 0.20 di profondità e m. 0.46 di larghezza. Nell'interno vi erano oggetti di vetro, terracotta e bronzo.'

Bed/ small box/ bench; Casa del Sacello di Legno (V 31), first floor (Cat.no. 24); 31-3-1934: 'Sul piano superiore della Casa N° 3 sul V° Cardine, lato ovest, in una cassetta di legno situata sotto al letto si sono raccolti parecchi frammenti di tavolette cerate per tritici, tutte scritte.'

4-4-1934: 'Anche oggi si sono smontate alcune tavolette ma parte conservano ancora l'iscrizione ed altre nulla.'

13-4-1934: 'Sul piano superiore interno della Casa N° 3, posta sul V° Cardine, lato ovest, nell'ambiente ove vi sono le tavolette cerate, al lato nord, del letto aderente alla parete ovest è stato sterrato un sedile di legno carbonizzato. E' lungo m. 1.40, largo m. 0.54, spessore del legno m. 0.07, alto m. 0.45. I due piedi distano all'estremità m. 0.32. E' ben conservato.'

19-4-1934: 'Si sono smontate le tavolette cerate accennate il giorno 31-3-1934.'

The finds from the Casa del Sacello di Legno (V 31) also appear in the *Descrizione di Ambienti* for this house: 'Nell'ambiente N° 4 fu sterrato un armadio-larario anche di legno contenente oggetti. L'ambiente N° 4 è a forma quadrata e misura m. 2.80 per lato. Il vano misura m. 0.935 di larghezza per m. 2.56 di altezza. La soglia manca. I pilastri sono di blocchi di tufo. E' un cubicolo dato che nell'interno furono sterrati avanzi di letto di legno e un armadio larario anche di legno. ... Nell'angolo sud-est fu sterrato un armadio-larario di legno. La parte alta serviva come arario e quella bassa come armadio - Il tutto è alto m. 1.70, m. 0.54 di profondità e m. 0.67 di larghezza - L'ara è alta m. 0.68 per m. 0.63 di larghezza e m. 0.51 di profondità. Nella parte anteriore vi sono due colonne corinzie di legno dell'altezza di m. 0.48 - Esse poggiano sopra una base alta m. 0.14 - Sopra le colonne vi è la tavola dello spessore di m. 0.03. A m. 0.16 di profondità dal fusto delle colonne vi sono le quattro porticine dell'Arario. Le due estreme sono fisse mentre quelle centrali si aprono e girano a mezzo di cerniere di osso poste l'una sull'altra. Ogni porticina è larga m. 0.13 alta m. 0.48 e dello spessore di m. 0.028 - Il battente è diviso in due riquadri - Quello superiore è di m. 0.12 di altezza per m. 0.05 di larghezza e m. 0.23 di altezza per 0.055 di larghezza quello inferiore. I pannelli sono

chiusi da cornice - Le parti laterali sono di un sol pezzo, ma divise in tre parti a mezzo di fascie sovrapposti della larghezza di m. 0.06. Il fondo superiore è dello spessore di m. 0.05 e della larghezza di m. 0.60 - Lo zoccolo è alto m. 0.10. L'armadiolo è alto m. 1.01 e largo m. 0.67. Conserva del suo una parte del battente sinistro. Le porticine hanno la medesima struttura e decorazione di quella superiore, ma sono alte m. 0.78, larghe m. 0.15 e dello spessore di m. 0.02. Nella parte interna vi sono due scomparti divisi a mezzo di una tavoletta di legno - Sopra essa e nel fondo, furono raccolti tutti gli oggetti esposti.'

Upper floor: 'Ambienti superiori. Quelli esterni non sono stati costruiti, solamente nella parte interna, v'è stato costruito uno e precisamente quello ove furono trovate le tre casse, due con le tavolette cerate e l'altra con utensili di vetro e bronzo. Nello stesso ambiente fu sterrato un letto di legno tutto marcito ed un sedile anche di legno ma molto ben conservato.'

Maiuri mentions one chest (1958, 255): 'Ma che l'ultimo proprietario della casa non fosse digiuno dell'esercizio delle lettere, si può desumere dal fatto che, in un cubicolo del piano superiore, si raccolse un buon numero di tabulae ceratae parte custodite in una capsula, parte ammassate sul pavimento sotto il letto del cubicolo.'

Rack; Casa della Gemma (*Insula Orientalis* I 1), room 3; 22-4-1934: 'Nell'ambiente N° 8, della Casa N° 1 posta all'estremità sud, del V° Cardine lato est, nell'angolo sud-est vi è una scansia a muro, alta m. 1.75 e della larghezza di m. 0.45. Doveva avere più scomparti fatti di tavolette di legno sostenute da chiodi di bronzo. In questo ambiente si è raccolto: terracotta: anforetta (E 1295).'

23-4-1934: 'terracotta: coppa.' [no inventory no.]

30-4-1934: 'A giudicare da una discreta quantità di chiodi sulle pareti e da un'apertura alta m. 1.75, larga m. 0.45 e profonda m. 0.30 fatta nell'angolo sud-est dell'ambiente e da alcune tavolette poste a modo di scansie, lo ambiente doveva servire come ripostiglio (4.45 x 2.50 m.) ... Sulla parete sud vi è un finestrino largo m. 0.53 che pigliava la luce dal giardino.'

The room is also described in the *Descrizione di Ambienti* for the Casa della Gemma: Ambiente N° 8. Il suddetto ambiente è posto a sud dell'atrio e misura m. 4.45 di lunghezza per m. 2.50 di larghezza. ... Nell'angolo sud-est vi è un armadio a muro alto m. 1.75 e della larghezza di m. 0.45 e profondo m. 0.30. Doveva avere più scomparti fatti con tavolette di legno e sostenute da chiodi di bronzo. Anche nella parete vi erano chiodi ciò fa supporre che l'ambiente in parola era un ripostiglio, dato anche la vicinanza della cucina ...'

Evidence for a bed; 'Casa del Rilievo di Telefo (*Insula Orientalis* I 2-3), room 3; 6-9-1934: 'L'Ambiente N° 6 è a sud del tablino. Misura m. 3.20 di lunghezza per m. 2.90 di larghezza. ... Sulla parete nord, estremità est, vi è l'incavo di un letto. L'incavo è alto m. 0.90, largo m. 0.70 e profondo m. 0.10.'

Chest; Casa di M. Pilus Primigenius Granianus (*Insula Orientalis* I 1a); 14-1-1935: 'Nello scantinato posto sotto al pavimento dell'ambiente N° 18 appartenente alla Casa N° 1, estremità sud del V° Cardine, lato est, tra i pilastri di un vano di comunicazione a m. 0.80 di altezza dal pavimento a m. 0.35 dalla soglia ed a m. 0.42 dal pilastro est è stato sterrata una cassa di legno carbonizzato completamente schiacciato tanto da non poter prendere le misure e nell'interno vi erano i seguenti oggetti: corniola con testa femminile (E 1323); pietra dura con testa di Diana (E 1324); vetro: coppetta (E 1325); id. (E 1326); vetro: unguentario (E 1327); id. (E 1328); vetro: coppetta (E 1329); frutto di mare: piccola tofa (E 1330); bronzo: timbro (E 1331).'

15-1-1935: 'Anche oggi nel medesimo sito ove era la cassa di legno è stato raccolto: bronzo: moneta (E 1332); id. (E 1333).'

'Casa di M. Pilus Primigenius Granianus, *Insula Orientalis* I 1a, riassunto ... Anche nello scantinato posto sotto all'ambiente N° 18 della Casa N° 1, in una cassa di legno carbonizzato furono raccolti molti oggetti. I più notevoli sono una corniola e una pietra dura.'

The finds also appear in the *Descrizione di Ambienti*: 'In un ambiente sottostante fu sterrata una cassa di legno carbonizzato ed in essa fu trovata una gemma. Da questo ritrovamento fu dato il nome della Casa.'

The chest is also mentioned by Maiuri (1958, 344) 'Durante lo scavo, nel vano di comunicazione fra l'alcova e il vestibolo, si rinvenne, sollevata a m. 0,80 dal pavimento, una cassa di legno che il torrente fangoso, precipitando dall'alto, aveva sollevato, capovolto e sfondato da uno dei lati. Vi si rinvennero all'interno 3 coppe e 2 balsamari di vetro discretamente conservati, una bella corniola con ritratto femminile in rilievo, un'altra più piccola corniola con figura di Diana, una conchiglia marina usata per buccina e, infine, un sigillo

in bronzo con l'iscrizione, come di consueto, retrograda.'

Bed; Casa della Gemma, *Insula Orientalis* I 1; 11-2-1935: 'Si è ripigliato il lavoro sia negli ambienti terranei della Casa N° 1 e sia nella Casa N° 2 poste amendue sud del V° Cardine, lato est. Negli ambienti della prima Casa si va sterrando un letto di legno carbonizzato con piedi di ferro. - E' lungo m. 1.95 ed alto m. 0.35. La larghezza non si può segnare per il momento perché non del tutto posto alla luce.'

Small box; Casa del Rilievo di Telefo (*Insula Orientalis* I 2), garden; 4-1935: '(riassunto) ... Una quantità di minuti pezzi di vetro a forma varia furono trovati in un piccolo cassetto di legno nel terreno alto del giardino. Essi formano una collana. Non manca qualche oggettino di ambra.'

15-5-1935: 'Al lato nord del giardino del rilievo di Oreste a m. 3.70 di altezza ed a m. 4.20 della parete ovest in una piccola cassetta di legno carbonizzato, lunga m. 0.25 alta m. 0.15 e dello spessore di m. 0.015 vi erano: vetro: coralli e piccoli oggetti di forme diverse N° 110 (E 1358).'

Bed; *Insula Orientalis* II 10 (Cat.no. 13); 6-6-1936: 'Sul solaio del piano terraneo della Casa N. 10 posta sul 5° Cardine seconda insula orientalis si è raccolto: bronzo: piccolo candelabro (E 1513); vetro: bottiglia (E 1514).'

8-6-1936: 'terracotta tipo aretino: lucerna (E 1515); terracotta: lucerna (E 1516); terracotta: lucerna (E 1517); terracotta: lucerna (E 1518); vetro: bottiglia (E 1519).'

10-6-1936: 'vetro: bottiglia (E 1520); bronzo: lucerna (E 1521); terracotta: bicchiere (E 1522); bronzo: patera (E 1523).'

Insula Orientalis II 10, room a (Cat.no. 13); 22-6-1936: 'Nell'ambiente N. 2 della casa 10 posto sul 5° cardine seconda insula orientale, a m. 1.25 dalla parete est e a m. 0.80 da quella nord sul pavimento vi è raccolto: bronzo: casserola (E 1548); bronzo: 2 strigili (E 1549); terracotta: urceo (E 1550).'

30-6-1936: 'bronzo: casserola (E 1564); bronzo: coppa (E 1565).'

3-7-1936: 'Sul pavimento dell'ambiente N° 2, appartenente alla Casa N° 10, posta sul V° Cardine, II insula orientale, a m. 2.70 dal vano di comunicazione, e a m. 0.15 dalla parete nord, si è sterrata una piccola cassa completamente rotta, e conteneva nell'interno quanto segue: bronzo: moneta (E 1569); bronzo: moneta (E 1570); argento: 30 monete (E 1571); vetro: disco ovale (E 1572); corniola con intaglio (E 1573); corniola (E 1574); osso: 3 dati (E 1575); vetro: 4 unguentari (E 1576).'

4-7-1936: 'Nello stesso ambiente di ieri si è sterrato: terracotta: lucerna (E 1577); id. (E 1578); aretina: lucerna (E 1579).'

5-7-1936: 'Si lavora nella casa 10 e 11 poste amendue sul 5° cardine seconda insula orientale. Nella prima casa a m. 0.50 di altezza dal pavimento a m. 0.82 dalla parete sud e a 2.84 da quella est si è raccolto: marmo bianco alabastro: tavolo alto m. 1.05. Manca la base. Il piede è di marmo bianco ridotto in più pezzi, cui nessuno vi manca. Il tavolo è di alabastro largo m. 0.63 lungo m. 0.95 e dello spessore di m. 0.04. E' ridotto in più pezzi, ma è completo. Sulla faccia anteriore vi è attaccato una testa di Dioniso di marmo bianco dell'altezza di m. 0.16. La testa è adorna di pampani con grossi grappoli di uva. - E' ben conservata, e la scultura è di discreta fattura - Il tavolo appartiene al piano superiore (E 1580). Ferro: roncola (E 1581).'

6-7-1936: 'Nella Casa N° 10 5° Cardine seconda insula orientale sul pavimento si sono raccolti i seguenti oggetti: corniola con intaglio (E 1582); id. (E 1583); id. (E 1584); id. (E 1585); osso: disco forato con incisione di testa di sileno (E 1586); pasta vitrea: cameo (E 1587); argento: utensile (E 1588); argento: utensile (E 1589); argento: ornamento di mobile. E' del diametro di m. 0.02 (E 1590); argento: stiletto (E 1591); bronzo: patera (E 1592); materiale diverso: pezzi 140 (collana) (E 1593).'

7-7-1936: 'Anche oggi sul battuto del piano terreno della casa ieri accennata vi è raccolto: diaspro (E 1594); pasta vitrea: cameo (E 1595); pasta vitrea (E 1596); ametisto (E 1597); vetro: bottiglia (E 1598); terracotta: vasellino (E 1599).'

8-7-1936: 'Sul pavimento del piano terraneo: bronzo: anfora (E 1602); bronzo: uncinetto per lavorare reti (E 1603); bronzo: bacinella (E 1604); bronzo: 2 pinze (E 1605); bronzo: casserola (E 1606); bronzo: piatto (E 1607); bronzo: casserola (E 1608); vetro: 3 unguentari (E 1609); terracotta: urceo (E 1610); terracotta: lucerna (E 1611); agato: intaglio (E 1612).'

10-7-1936: 'Si sono raccolti i sottoseguenti oggetti nello stesso ambiente e casa di ieri: terracotta: lucerna (E 1613); bronzo: oenochoe (E 1614); terracotta: anforetta (E 1615).'

12-7-1936: 'bronzo: lampada (E 1616); marmo bianco: erma di Bacco (E 1617).'

14-7-1936: 'bronzo: candelabro m. 1.23 (E 1618).'
 17-7-1936: 'A m. 0.80 di alt. a 0.35 dalla parete ovest e a 2.70 da quella nord: tufo: ara votiva (E 1619); terracotta: lucerna (E 1620); terracotta: lucerna (E 1621); bronzo: campanello (E 1622).'
 18-7-1936: 'vetro: bottiglia (E 1624).'
 20-7-1936: 'agata: intaglio (E 1632); alabastro: vasettino (E 1633); bronzo: moneta (E 1634); vetro (E 1635); terracotta: bruciaprofumo (E 1636); terracotta: lucerna (E 1637); id. (E 1638); terracotta: piatto (E 1639).'
 21-7-1936: 'Nella stessa casa accennata ieri presso l'angolo sud-ovest dell'ambiente 2 sul pavimento si è sterrato: terracotta: lucerna (E 1640); id. (E 1641); id. (E 1642); madreperla (E 1643); piattino (E 1644).'
 28-7-1936: 'Nella Casa 10, nell'ambiente posto a valle di quello ove furono trovate le corniole si è sterrato: marmo: ritratto di uomo (E 1645).'
 7-10-1936: 'Nella casa N. 10, ambiente 2, sul pavimento, a m. 0.85 dal vano d'ingresso e a m. 0.40 dalla parete nord si è raccolto: T.C. Lucerna (E 1694).'
 8-10-1936: 'Nel medesimo ambiente e casa ieri accennata si è sterrato un letto di legno carbonizzato. E' a m. 0.70 di altezza del pavimento - Esso fu sollevato dalla lava entrata dal vano d'ingresso. E' lungo m. 1.92 per m. 1.05 di larghezza. Le spalliere sono alte m. 0.60 per m. 0.02 di spessore, esse sono impellicciate con intarsio. I traversoni principali sono larghi m. 0.13 e m. 0.06 di spessore. I piedi sono torniti. Sul pavimento vi era uno scheletro di un giovanotto che a giudicare dallo scheletro poteva avere una quindicina di anni. La testa penetrava sotto il letto per circa una trentina di centimetri. Lo scheletro era da nord-ovest a sud-est.'

Two beds; *Insula Orientalis* II 9, retrobottega (Cat.no. 12); 9-12-1936: 'Nella casa 9 ambiente N. 2 a m. 1.35 di altezza dal pavimento e a m. 1.04 dalla parete ovest e a 0.82 da quella nord nel terreno duro si è sterrato: bronzo: lucerna (E 1722); legno: rocchetto per avvolgere filo (E 1723); terracotta: urceo (E 1724); vetro: unguentario (E 1725); terracotta: piattino (E 1726).'

21-12-1936: 'Nell'ambiente 2 della casa a m. 0.70 di altezza dal pavimento si è sterrato un letto di legno carbonizzato ridotto in minuti pezzi. Dai frammenti raccolti si osserva che aveva la forma di tutti quelli già posti alla luce.'

23-12-1936: 'Nell'ambiente N. 2 della casa 9 si sta sterrando un secondo letto di legno. Mancano moltissimi pezzi. Le misure saranno segnate a sterro ultimato.'

28-12-1936: 'A m. 0.75 dal letto e a m. 0.40 dalla parete ovest sul pavimento si è sterrato: terracotta: vasettino (E 1728).'

29-12-1936: 'A 0.85 dalla par. N. e a 1.25 da quella est: bronzo: moneta (E 1729).'

Earlier finds had already been made in this room: 13-2-1936: 'Nell'ambiente 2 della casa 9 posto sul 5° cardine 2° insula orientalis vi sono moltissime anfore sia sul solario del piano superiore che a quello inferiore, ma esse sono quasi tutte ridotte in minuti pezzi da non potersi raccogliere e restaurare. Dette anfore servivano per conservare olio, vino ed altro occorrente al termopolio posto nell'ambiente precedente.'

Amphora rack; *Insula Orientalis* II 9, bottega (Cat.no. 33); 31-12-1936: '... Sulla parete est all'altezza dell'architrave vi erano delle scansie di legno per conservare le anfore simili a quelle che si trovano nella casa d'Anfitrite posta sul 4° cardine lato orientale.'

Bed (fragment), chest; V 19-22, first floor; 23-8-1937: 'Frammento di letto di legno carbonizzato è stato posto alla luce. Non è possibile conservarlo dato la sua poca consistenza.'

1-9-1937: 'In un ambiente del piano superiore di una casa che ha l'ingresso, non ancora sterrata e perciò non numerata, sul Decumano Massimo, in una cassa di legno carbonizzata completamente distrutta, vi era quanto segue: bronzo: statuetta di Venere (E 1746); vetro: oggetto a forma di olla (E 1747); terracotta: bicchiere (E 1748); id. (E 1749); terracotta: urceo (E 1750); terracotta: anforetta (E 1751); vetro: 5 unguentari (E 1752); oro: nastrino (E 1753); argento: anello (E 1754); corniola (E 1755); argento: ciondoli 2 (E 1756); osso nero: 3 dati (E 1757); vetro: coralle N. 36 (E 1758); osso nero: tessere a forma di maialetto (E 1759); osso bianco: astragoli N. 28 (E 1760); osso nero: astragoli N. 25 (E 1761).'

Bed, chest; V 19-22, first floor (V 22, room D, Cat.no. 9); 3-9-1937: 'In un ambiente posto al primo piano di una casa in corso di sterro, vi è parte di un letto di legno carbonizzato. E' posto da est ad ovest - A sterro ultimato saranno segnate le varie misure.'

6-9-1937: 'Nello stesso ambiente accennato il primo corrente mese, e precisamente in quello ove furono

raccolti vari oggetti, sul pavimento si è sterrato: pietra dura: corniola (E 1762); id. (E 1763); id. (E 1764); id. (E 1765); id. (E 1766); id. (E 1767); id. (E 1768).'

8-9-1937: 'Parecchi frammenti di legno carbonizzato si sterrano. Pare che fra essi vi sia un piede di sedile.'

1-10-1937: 'In un ambiente del primo piano della casa N. 24 Decumano Massimo insula V estremità lato est a m. 0.95 di altezza dal pavimento nell'angolo nord-ovest, in una cassa di legno carbonizzato completamente rotto vi sono molte tavolette cerate (E 1773); bronzo: bollo.'

4-10-1937: 'Le tavolette sono di formato piccolo e grande. Le piccole erano poste in senso verticale e poggiavano sopra un palchetto di legno inchiodato nella parete ovest, le grandi erano conservate in una cassa di legno che era ferrata. La cassa era abbattuta da 1 m. a nord. Dato che l'oggetto in parola era m. 0.80 di altezza dal pavimento è da supporre o che doveva stare al piano superiore o che sia portata nell'ambiente dalla corrente di fango - Il numero delle tavolette è di circa 80.'

3-11-1937: 'Nell'ambiente del piano superiore della casa 24 posta nel Decumano Massimo insula V, e cioè in quello ove furono sterrate le tavolette cerate, è stata trovata un'altra cassetta di legno carbonizzato nello stesso sito del primo, angolo nord-ovest - Essa contiene altre tavolette.'

5-11-1937: 'La seconda cassetta sterrata nell'ambiente del piano superiore è a forma ovale lunga m. 0.50 diametro m. 0.32 e dello spessore di m. 0.55. Conteneva internamente: legno: tritici 6 (E 1778bis).'

6-11-1937: 'Una terza cassetta di legno carbonizzato dell'altezza di m. 0.45, m. 0.45 di larghezza e m. 0.68 di lunghezza contenenti anche tavolette è in corso di sterro. Essa trovasi nell'angolo nord-ovest dello stesso ambiente delle altre.'

Libr. trov. no. E 1773, p. 23-24: 'Data 1-10-37; Piano inf. 24 Decumano Massimo (Casa del Bicentenario); Legno, tritici: 14 Tritici (Napoli).'

Libr. trov. no. E 1778 bis, p. 25-26 'Data 5-11-1937; Legno Tavolette tritici 6 (Napoli).'

The rooms on the first floor of V 22 also appear in the *Descrizione di Ambienti*: 'Solamente due stanze del piano superiore sono degno di rilievo, delle altre non esiste nessuno traccio di muratura. La prima è quella posta sulla casa 24, ambiente 4 e misura m. 3.13 x 3.13. ... A m. 0.94 di altezza dal pavimento nella parete nord vi è un finestrino largo m. 1.15 x 1.05. ... In questo ambiente nell'angolo nord-ovest sul pavimento si sterrarono due casse di legno contenente tavolette cerate. Presso la parete sud un bellissimo letto anche di legno. E' anche raccolto il bollo seguente ... Il secondo ambiente è largo m. 1.78 e lungo m. 3.10 ... Doveva essere un ripostiglio dato che furono sterrate varie mensole di legno presso la parete sud ... Parecchi oggetti furono sterrati sia al piano superiore che a quello inferiore.'

The chest is also mentioned by Maiuri (1958, 480, nota 234): 'Nel cubicolo D, entro una cassetta lignea, si rinvenne un buon numero di tabulae ceratae.'

15-11-1937: 'La cassetta di legno descritta il giorno 6 corrente mese, oggi è stato rotto - Essa conteneva: legno: tavolette per tritici circa 150 (E 1798).'

Libr. trov. no. E 1798, p. 27-28: 'Data 15-11-1937; Casa del bicentenario, Casa N°. 25; Decumano Massimo. Ins. V Piano Superiore. Legno, Tavolette per tritici 150 circa, parte scritte e parte rovinare (Napoli).'

16-11-1937: 'In un ambiente del piano superiore della Casa N° 24 Decumano Massimo insula V, presso il letto si è sterrato: terracotta: lucerna (E 1799).'

Bed; Bottega V 20, ground floor, retrobottega; regarding this shop the *Descrizione di Ambienti* (but not the excavation reports) state: '... Si nota nella parete est un incavo di letto largo m. 2.77 e alto m. 1.02. Poiché tra il primo e il secondo ambiente non vi era nessun muro di separazione, e dato che sulla parete est all'altezza di m. 2.37 dal pavimento si nota in un'alveola traccia di travo carbonizzato ciò fa supporre che doveva starci una separazione di legno e tanto per impedire ai passanti di guardare nell'interno. La forma molto sviluppata del letto c'indica che poteva servire per coloro che sostavano per mangiare o bere seduti.'

Cupboard; Casa del Bicentenario, bottega V 17, first floor (Cat.no. 37); 8-11-1937: 'Nell'angolo nord-ovest della cucina (casa 25) vi è una grande cassa di legno carbonizzato. Manca una parte del battente sinistro.'

11-11-1937: 'La cassa di legno nella parte interna era formata di tre scomparti. In essa vi erano i seguenti oggetti: terracotta aretina: coppetta (E 1786); terracotta: urceo (E 1787); terracotta policromata nera: vasettino (E 1788); terracotta: urceo (E 1789); id. (E 1790); terracotta: pentola (E 1791).'

12-11-1937: 'Si è ripreso lo sterro della cassa. Dall'interno sono stati estratti gli altri seguenti oggetti: terracotta: anforetta (E 1792); terracotta: urceo (E 1793); id. (E 1794); terracotta: bicchiere (E 1795); terracotta:

utensile di cucina (E 1796); terracotta arretina: coppetta (E 1797).'

Cupboard; Casa del Bicentenario (V 15), first floor, room A (Cat.no. 39); 28-1-1938: 'In un ambiente del piano superiore e precisamente quello adoperato come ripostiglio, sulla parete ovest, sopra lo stucco a fondo bianco vi è incisa una croce ... Sul pavimento sotto la croce vi è una cassa o ara votiva di legno carbonizzato non ancora sterrata.'

29-1-1938: 'Nell'ambiente della croce, si è sterrato: bronzo: casserola (E 1868).'

1-2-1938: 'Nell'ambiente della croce, aderente alla parete sud e a m. 0.75 da quella est si è sterrato: terracotta policromata nera: Piatto (E 1870).'

3-2-1938: 'Si è sterrato la cassa o ara votiva che trovai nell'ambiente della croce. Misura m. 1.10 di altezza la parte posteriore, mentre quella anteriore è di m. 0.92 dato che è fatta a piano inclinato. Le fiancate sono alte m. 0.64 e la larghezza è di m. 0.62. La pretella che trovai avanti è di m. 0.24 di altezza, m. 0.45 di larghezza e m. 0.87 di lunghezza. L'apertura della porticina è a forma quadrata e misura m. 0.30 x 0.30. Sono trovati piccoli fichi.'

8-2-1938: 'Oggi si è aperto la cassa o erario di legno. In essa vi erano i seguenti oggetti: nel secondo scomparto ricominciando a contare da quello superiore conteneva: terracotta: lucerna (E 1875); id. (E 1876); osso: dato (E 1877). Nel terzo scomparto vi era una forma di fango somigliante ad un bicchiere. Pochissimo legno conservavano le faccie.'

Cupboard; Casa del Bicentenario (V 15), first floor (second room after 6); 10-2-1938: 'In un ambiente del piano superiore che tiene le pareti coperte di stucco bianco con medaglioni, nell'angolo nord-est vi è una cassa di legno carbonizzato. A scavo ultimato saranno segnate le misure.'

18-3-1938: 'La cassa di legno carbonizzato scavato il 10-2 u.s. è alta m. 1.04, larga 0.55 e profonda m. 0.40. Essa conteneva: vetro: bottiglia (E 1896); pasta vitrea: corniola (E 1897); terracotta: fittello? (E 1898); terracotta: vaso per cucina (E 1899).'

The two passages from 10-2-1938 and 18-3-1938 are quoted by Falanga (1981, 84).

Casa del Bicentenario (V 15), first floor; 30-3-1938: 'Oggi è stata aperta la cassa di legno che fu situata il 16 marzo u.s. al piano superiore della casa 27 Decumano Massimo insula V. In essa vi era: bronzo: lucerna (E 1911).'

Chest; Casa del Bicentenario (V 15), first floor; 15-3-1938: 'Casa 27 parete sud: ara votiva (0.33 x 0.31 x 0.26 m.): statuetta di legno.'

16-3-1938: 'Nello stesso ambiente di ieri si è sterrato una cassa di legno carbonizzato alto m. 1.43, piedi compresi, i quali sono alti m. 0.27, largo m. 0.65 e profondo m. 0.50. Essa è formata di 7 tavolette. Quando sarà aperta si segneranno gli oggetti che eventualmente contiene.'

Chest; Casa del Bicentenario, bottega V 17, ground floor; March 1938: 'Nella casa 25, ambiente 1° piano terraneo, Decumano Massimo insula V, a m. 2.80 dal vano d'ingresso e a m. 0.45 dalla parete est, in una cassetta di legno forma rettangolare, lungo m. 0.38, alto m. 0.25 e largo m. 0.20 vi era: terracotta: 17 lucerne (E 1883); terracotta: 2 lucerne (E 1884).'

Chest; V 22, first floor; Falanga (1981, 86) quotes the *Giornale degli Scavi* for 30-4-1938: 'In questo ambiente (no. 4 al piano superiore della casa 24, un tempo collegata con quella del bicentenario), nell'angolo nord ovest sul pavimento si sterrano due casse di legno contenenti tavolette cerate'. We have been unable to trace this passage.

Small box; Casa V 11, first floor; 20-8-1938: 'All'estremità nord del IV Cardine, a m. 2.75 di altezza dal lastricato stradale, in un cassetto di legno carbonizzato completamente rotto vi erano conservati: argento: 562 monete (E 1947).'

Chest; Casa del Bicentenario (V 15), first floor, room to the east of the *tablinum*; 10-10-1938: 'In un ambiente del piano superiore posto ad est del tablino della casa del bicentenario, nell'angolo nord-ovest, in una cassa di legno carbonizzato, alta m. 0.68, larga m. 0.55 e lunga m. 0.86 vi era: legno: tavolette per

trittici circa 150 (E 1954). Cf. Falanga 1981, 86-87.'

Libr. trov. no. E 1954, p. 61-62: 'Data 10-10-38; Casa del bicentenario piano superiore ad est del tablino; Legno, Tavolette per trittici circa 150. Parte non scritte e parte completamente frammentate (Napoli).'

Rack; Bottega V 12 (Cat.no. 34); 22-3-1939: 'Nel magazzino della casa 12 posta sul Decumano Massimo insula V, sulla parete ovest vi è uno scaffale di legno carbonizzato. E' alto m. 2.18 e largo attualmente m. 1.22 ma era più largo perché alle due estremità è rotto. Si compone di quattro scomparti. Il primo a cominciare dal pavimento è alto m. 1 e largo m. 1.06, il secondo m. 0.52 di altezza e m. 1.06 di larghezza, il terzo m. 0.38 di altezza e m. 0.48 di larghezza ed in fine l'ultimo è alto m. 0.27 x 0.52. Le traverse di legno che lo compongono, quelle orizzontali sono larghe m. 0.05 e quelle verticali m. 0.04. Non si osserva che cosa conteneva perché non ancora svuotato.'

11-4-1939: 'Oggi si è svuotato lo scaffale di legno carbonizzato sterrato il 22 Marzo u.s. nell'ambiente N. 12 della casa 11, Decumano Massimo, insula V. Nell'interno conservava quattro ramazze di paglia.'

Aedicula (fragment): Casa del Salone Nero (VI 13), garden (Cat.no. 30); 17-5-1939: 'Nel giardino della casa 11, presso la cunetta lato nord si è sterrato: marmo bianco policromato rosso: capitello corinzio. E' in buono stato di conservazione. La sua altezza è di m. 0.07 e il diametro m. 0.06 (E 1986).'

5-10-1939: 'Sul pavimento del triclinio ambiente 10 casa 11, a m. 3.40 dalla parete nord e a 2.90 da quella ovest si è sterrato: bronzo: basetta rettangolare (E 2000) ...; marmo bianco policromato rosso: capitello ordine corinzio. E' alto m. 0.07 e del diametro di m. 0.06. E' il secondo trovato nella casa (E 2001).'

7-11-1939: 'Ivi, a m. 0.40 dalla parete nord dell'ambiente N° 10, a m. 1.25 dal vano secondario d'ingresso in un cunicolo, ed a m. 0.30 di altezza dal pavimento, si è rinvenuto: bronzo: statuetta alto m. 0.09. (Esculapio) (E 2004).'

9-11-1939: 'Una squadra di operai viene adibita allo scavo dell'ambiente N° 10 della casa N° 11 - Cardo IV - Ins. VI. In esso, a m. 2.70 di altezza dal pavimento e nello strato vergine dei materiali vulcanici, si è rinvenuto: legno: (E 2005) rocchio di colonnina alto m. 0.30 e del diametro di m. 0.055; su di esso si contano 39 baccellature della profondità di m. 0.005. Questo rocchio di colonnina, fatto di un legno molto consistente, porta al centro della parte superiore un perno, pure di legno, che serviva per innestarvi qualche cosa. Qui è opportuno ricordare che il giorno 5 ottobre u.s. sul pavimento di questo stesso ambiente, venne rinvenuto un capitello corinzio di marmo portante nella parte inferiore un foro nel quale s'innesta perfettamente il perno del rocchio di colonnina ora menzionato. Questa considerazione induce a pensare che tanto il rocchio di colonnina, quanto il capitello, facessero parte di una sola cosa destinata a sorreggere forse il frontone di un larario in legno. Questa supposizione è avvalorata dal fatto che nel giorno 17 maggio u.s. durante lo sterro del giardino di questa stessa casa, si rinvennero frammenti di legno carbonizzato facenti parte di un timpano di un larario, nonché un'altro capitello, simile a quello rinvenuto, in data 5 ottobre 1939.'

Libr. trov. no. E 2005; p. 81-82: 'Data 9-11-39; triclinio (salone nero) Casa 11 5 [sic]. Cardine Ins. V? Ambiente 10 pianterreno Legno Fusto di colonnina alto m. 0,30 e del diametro di m. 0,055.'

15-1-1940: 'Ultimatosi il lavoro di ivi alla relazione del giorno 13 u.s. si è potuto completare la rimozione dei residuali materiali lavici addossati alla parete nord dell'ambiente N° 8 della casa N° 11 Ins. VI, cardo IV. In questa località e precisamente a m. 0.40 di altezza dal pavimento, a m. 2.80 dalla parete est ed a m. 1.20 da quella nord, si è sterrato: (E 2020) legno carbonizzato - rocchio di colonnina alto m. 0.45 e del diametro di m. 0.05 poggiante su basetta circolare di legno alta m. 0.025 e del diametro di m. 0.10. Questo rinvenimento ci richiama all'altro simile di cui è cenno nella relazione del giorno 9 novembre u.s. ed è quindi da ritenersi avvalorata la ipotesi allora prospettata che trattasi degli avanzi carbonizzati di un tempio larario.'

Libr. trov. no. E 2020, p. 85-86: 'Data 15-1-1940 (salone nero, Casa 11 Cardo IV Ins. VI amb. 8 pianoterreno; Legno, Rocchio di colonna dell'altezza di m. 0,45 e del diametro di m. 0,17.'

Rack; Casa del Salone Nero (VI 13), room c; 2-6-1939: 'E' incominciato lo sterro d'un ambiente posto ad ovest della cucina. Doveva essere un ripostiglio poiché quasi all'altezza di m. 0.05 x 0.035 dal pavimento sulla parete nord si notano delle alveole con delle tracce di travicelli a forma rettangolare di m. 0.05 x 0.035 che potevano sostenere delle tavole per deporre gli utensili o provviste.'

Bed leg; Casa del Salone Nero (VI 13), first floor, room measuring 3.18 x 3.55 m.; 3-6-1939: 'Prosegue il lavoro nei piani superiori. In un ambiente si è raggiunto il solaio, il quale è di signino - Nell'angolo nord-ovest dell'ambiente si è raccolto un piede di letto di legno tornito dell'altezza di m. 0.13.'

Rack; 'Casa del Salone Nero (VI 13), first floor, along the north side of the *porticus*; 16-8-1939: 'All'estremità del ballatoio del lato nord della Casa 11, Cardine IV insula VI, sul pavimento a m. 0.15 dalla parete est e a 0.50 da quella nord si è sterrato: legno: circa 50 trittici (E 1994) discretamente conservati. Essi sono divisi in quattro mucchietti e complessivamente misurano in lunghezza da nord a sud m. 0.60, e da est ad ovest m. 0.37. L'altezza è di m. 0.40. I trittici dovevano stare collocati o dovevano esserci posti in una scansia di legno che era inchiodata nella parete nord. Le misure attuali dell'oggetto in parola sono: altezza m. 0.50, spessore delle traverse m. 0.03 e larghezza m. 0.06. Le tavolette che formavano i vari scomparti sono dello spessore di m. 0.015.'

Libr. trov. no. E 1994, p. 75-76: 'Data 16-8-39 (Salone Nero nel peristilio) Legno carbonizzato: Trittici N° 50 discretamente conservati (Napoli).'

Rack; Casa del Salone Nero (VI 13), first floor, along the north side of the *porticus*; 29-9-1939: 'Il giorno 16 agosto u.s. scrissi che le tavolette cerate sterrate all'estremità nord del ballatoio della casa 11, insula VI, cardine IV, dovevano stare in uno scaffale di legno, ma le misure complete non si potevano segnare perché non del tutto sterrato. Oggi che si è completato lo sterro si segnano le misure definitive. La lunghezza dello scaffale è di m. 1.15, l'altezza 1.40 e la larghezza m. 0.18. Era divisa in tre scomparti distanti l'uno dall'altro m. 0.38 - Le tavolette di sostegno sono larghe m. 0.18 e lo spessore m. 0.02. La parete anteriore è completamente aperta, non così quella posteriore che è chiusa con tavolette di legno. Le traverse dello scaffale in numero di sei sono larghe m. 0.06 e dello spessore di m. 0.03 - Il legno è policromato rosso.'

Chest, cupboard and bed; Casa dei Due Atri (VI 28-29), room 3; 16-11-1939: 'Si è ripreso il lavoro di sterro nell'ambiente posto a sinistra del tablino della casa N° 12 Cardo III° Ins. VI. Durante la rimozione dei materiali vulcanici ivi esistenti, a m. 1.80 dalla parete ovest, a m. 0.50 da quella nord, ed a m. 1.20 dai travi che sostenevano il battuto del piano superiore, e precisamente sotto l'incannucciata, si è rinvenuta una cassa, di legno carbonizzato. Essa è posta in linea orizzontale, ma rovesciata. Da un attento esame si sono potute ricavare le dimensioni e cioè: larghezza m. 0.80 - Altezza m. 0.50 - Lunghezza m. 1.45; era costruita da doghe larghe m. 0.09 e dello spessore di m. 0.02. L'interno della cassa era diviso in scomparti, ma di questi non è stato possibile prendere alcuna misura. Nel primo scomparto si è rinvenuto: bronzo: urceo (E 2006); id. (E 2007); bronzo: campanello (E 2008) ... Nel secondo scomparto la cassa conserva delle tavolette cerate per rimuovere le quali si resta in attesa di ordini superiori. L'aver trovata questa cassa nel luogo e nella posizione innanzi citata, fa supporre che al momento della catastrofe essa si trovava poggiata altrove e che la furia del fango, entrato nell'ambiente, l'abbia sollevata portandola alla altezza da noi rinvenuta.'

17-11-1939: 'Continuandosi il lavoro di sterro nell'ambiente innanzi citato nell'angolo nord-ovest a m. 0.80 di profondità dai travi di sostegno del solaio sovrastante, si è disterrata un'altra cassa di legno a forma angolare delle seguenti dimensioni: lunghezza m. 0.85 - altezza m. 0.75 - profondità m. 0.45, con due battenti, ciascuno di m. 0.40, e con gli stipiti larghi 0.025. Le cerniere dei battenti sono in legno a forma circolare del diametro di m. 0.02 e lunghe m. 0.06. Queste cerniere giocavano su di un asse pure di legno. Anche questa cassa come quella rinvenuta ieri, era costruita a doghe dello spessore di m. 0.02 e non conteneva nessun oggetto. Data la cattiva conservazione di questa cassa, non è stata possibile trarne un disegno, né una fotografia.'

22-11-1939: 'A seguito di ordini ricevuti, si è completato lo sterro della cassa rinvenuta il giorno 16 u.s. nell'ambiente posto a sinistra del tablino della casa N° 12.- Cardo III° - ins. VI. In essa vi sono rinvenuti i seguenti oggetti: legno carbonizzato: trittici N° 20 (E 2009); bronzo: due sacchetti di stoffa contenenti monete (E 2010); argento due cucchiaini (E 2011); bronzo spadula (E 2016); vetro: nove unguentari (E 2012); pepe (E ?); grammi 75 (E 2013); bronzo e legno: scatola rivestita da una sottilissima lamina di bronzo con decorazione di foglie e ovoli (E 2014) (0.14 x 0.08 x 0.035 m.); cereali miglio grammi 15 (E 2015).'

Libr. trov. no. E 2009, p. 81-82: 'Data 22-11-39; Casa dei due atrii (tablino) 12 Cardine III Ins. VI piano terreno, Legno Carbonizzato, trittici 20 di media grandezza (Napoli).'

18-12-1939: 'Si è ripreso il lavoro di sterro nell'ambiente posto a sinistra del tablino della casa N° 12, Ins. VI Cardo III°, ed in esso si è sterrato un letto di legno carbonizzato. Questo letto, conservatosi discretamente

solo nella estremità sinistra, perché l'altra estremità distratta per il passaggio di un cunicolo, è orientato est-ovest ed è addossato alla parete nord dell'ambiente: misura m. 2.33 di lunghezza m. 1.00 di larghezza e m. 0.28 di altezza. Le spalliere sono alte m. 0.50 ed i piedi m. 0.28. A m. 0.57 dalla spalliera comincia il reticolato centrale formato da traversoni larghi m. 0.08 e dello spessore di m. 0.05. Tra il reticolato centrale e la spalliera notasi un secondo reticolato di tessuto diviso in cinque scomparti della larghezza di m. 0.20 ciascuno. Per terra, e nella immediata vicinanza del letto, si è rinvenuta una decorazione di letto costituita da un pomo in legno con rivestimento di lamina sottilissima in argento con impressi ornamenti a conchiglia (alt. m. 0.16), diam. della base m. 0.06 e da una lamina di ferro e bronzo pure con rivestimento di lamina in argento con figurine a rilievo (Lungh. m. 0.54 - Largh. m. 0.05).'

28-12-1939: 'Si ricorda che in questo ambiente venne sterrata il mese scorso la cassa contenente le tavolette cerate, ed in data 18 corr. i resti di un letto.'

Dicembre 1939: 'Riassunto. ... Nella casa N° 12: 1° gli avanzi di un letto carbonizzato con un pezzo decorativo dello stesso, in bronzo e ferro, con sovrapposta una sottilissima lamina di argento decorata. 2° Due urcei di bronzo.'

Rack; Casa di M. Pilus Primigenius Granianus (*Insula Orientalis* I 1a); 13-3-1940: 'Si è completato lo sterro dell'ambiente N° 1, sottostante alla Casa della gemma, rinvenendo i seguenti oggetti: bronzo, piatto; terracotta: urceo. Nello stesso ambiente si sono raccolti pure molti altri frammenti di piatti e bicchieri nonché un gruppo di anfore nell'angolo nord-ovest lasciato in sito (5-3-1940 terracotta: pentola; terracotta: anforetta; vetro: bicchiere; 12-3-1940 terracotta: piatto; terracotta: pentola). Considerata la specie degli oggetti rinvenuti in questo ambiente, nonché la presenza di molti chiodi infissi, nelle pareti destinati a sorreggere delle scansie, nasce la ipotesi che il locale era adibito a ripostiglio.'

Table; Casa dei Due Atri (VI 28-29), room not known; 21-3-1940: 'Amb. 9, Casa 12, Ins. VI. Vetro: mensole a forma di tavolino.'

22-3-1940: 'In questo ambiente, a m. 2.75 di altezza dal pavimento, presso la parete est, si è disterrata la parte superiore in legno carbonizzato di un tavolinetto di forma quadrata e con decorazione a rilievo a forma di greca.'

Cradle, table; Casa di M. Pilus Primigenius Granianus (*Insula Orientalis* I 1a), room E (Cat.nos. 11 and 19); 23-3-1940: '... Scheletro ...'

26-3-1940: 'Prosegue lo sterro dell'ambiente N° 5, sottostante alla Casa della gemma, ed allo stato presente dei lavori, si può asserire che suddetto ambiente vi era un ammezzato. Questa circostanza è desunta sia dall'intonaco che dal rinvenimento degli avanzi lignei. Nello stesso ambiente si va disterrando un oggetto in legno carbonizzato che forse sia una culla.'

28-3-1940: 'L'oggetto di legno carbonizzato, accennato nella relazione del giorno 26 c.m., rinvenuto nell'ambiente N° 5, è effettivamente una culla e conservava i resti carbonizzati dello scheletro di un bambino. Detta culla misura m. 0.47 di altezza, m. 0.52 di larghezza, e m. 0.83 di lunghezza. Le pareti della culla sono costituite da traverse di legno dello spessore di m. 0.02, e alte m. 0.04, posti alla distanza di m. 0.15 l'una dall'altra; il fondo è formato da sei traverse di uguali dimensioni delle precedenti. Detta culla è stata rinvenuta rovesciata ed in essa, oltre allo scheletro del bambino si sono rinvenuti anche i resti del materassino formato da foglie di albero. Prima di procedere alla rimozione dell'oggetto sopra citato è stata eseguita la documentazione fotografica, ed uno schizzo.'

29-3-1940: 'Continua il disterro dell'ambiente N° 5, sottostante alla Casa della gemma, addossato alla parete nord di questo ambiente, si è rinvenuto una cassa di legno pitturata in rosso e sostenuta da un chiodo di ferro infisso nella parete. In esso sono rinvenuti: vetro: cratere; terracotta: brucia-profumo; vetro: bottiglia; osso: dadi da giuoco N° 2.'

1-4-1940: 'Si è ripreso lo scavo dell'ambiente N° 5 sottostante alla casa della gemma. In esso si sono disterrati gli avanzi di tre scheletri di adulti e di un bambino; anfora nell'angolo nord-ovest.'

2-4-1940: 'Pietre dure: numero 9 corniole (E 2050); bronzo: due monete (E 2051).'

3-4-1940: 'Durante la prosecuzione dei lavori nell'ambiente N° 5 si è disterrato: legno carbonizzato: tavolinetto mancante delle estremità inferiori e con decorazione sulle gambe di una testa di cane. Alt. m. 0.44 - diametro del piano m. 0.52. Il piano di detto tavolino è sostenuto da tre traverse di legno larghe ciascuno m. 0.04 e dello spessore di m. 0.02 disposte a croce (E 2052).'

4-4-1940: 'Settimo scheletro; terracotta: tegame (E 2053); terracotta: 2 piatti (E 2054).

5-4-1940 terracotta: urceo (E 2055); terracotta: tegame (E 2056).'

Libr. trov. (numbered in pencil) 5: 'Collocazione Casa dell'atrio a mosaico; Descrizione: Legno. Piccola culla (cuna) di forma rettangolare con i piedi a dondola; Provenienza: incerta. Lu. m. 0,80, La. m. 0,50, Altezza m. 0,47. Stato: discreto, è completamente carbonizzato e conserva avanzi di materia vegetale.'

Bed; Isola Sacra; Maiuri (1958, 178) mentions a bed: 'Nel primo vano (N. II) trovansi un letto appoggiato all'angolo nord-est'; it is drawn in by Maiuri 1958, fig. 143.

Appliqué for a *fulcrum*, bronze; *Libr. trov.* no. E 2210 bis: 'Data: 19-10-1960. Posto: Cardo III Superiore (Decumano Massimo). Descrizione: Bronzo, Applique di testata a figura umana alata cm. 9 x 6.'

Scheda no. E 2210 bis: '(trafugato vedi lettera 344 del 5-8-75/ recuperato vedi lettera prot. n° 177, 27-2-76) Bronzo - 'Applique' con busto femminile diademat. (In realtà si tratta di Attis col beretto frigio) Provenienza: Cardo III Sup. (all'incrocio col Decumano Massimo) La. m. 0,06, Alt. m. 0,10. Stato: scadente, in molti punti si presenta corrosa incrostata.'

Appliqué for a *fulcrum*, bronze; *Libr. trov.* no. E 2211 bis: 'Data 19-10-1960. Posto: III Cardo Superiore (Decumano Massimo). Descrizione: Bronzo, Applique di testata alata a figura umana cm. 12 x 12.'

Scheda no. E 2211 bis: 'Trafugato 1975. Provenienza: III Cardo Superiore all'incrocio con il Decumano Massimo. Stato: buono, presenta {...} di fusione. Dimensioni: Larghezza m. 0,12; Altezza m. 0,12. Descrizione: Bronzo, Applique ad altorilievo con busto di satiro alato. Sulla testa corimbi di colera. Il braccio destro ripiegato sul petto stringe un elemento che potrebbe essere l'ansa di una spada. Omero destro tunicato. Osservazioni: fattura grezza.'

Appliqué for furniture, bronze; *Libr. trov.* no. E 2212 bis: 'Data: 19-10-1960. Posto: III Cardo Superiore (Decumano Massimo). Descrizione: Bronzo, Applique raffigurante Minerva di ottima conservazione. Dimensioni cm. 14 x 6.'

Scheda no. E 2212 bis: 'Trafugato 1975. Provenienza: Cardo III Superiore all'incrocio con il Decumano Massimo. Stato: Ottimo, tracce di incrostazione. Dimensioni: Lunghezza mass. m. 0,065; Altezza mass. m. 0,14; Spessore m. 0,06. Descrizione: 'Bronzo - 'Applique' con busto tunicato di Minerva: braccio destro piegato e rivolto verso la spalla sinistra con mano a pugno ed indice proteso - Elmo adorno di ampia cresta.'

Bronze table leg, fragment; *Libr. trov.* no. E 2214 bis: 'Data: 22-10-1960. Provenienza: Trovato a m. 0,90 dalla porta della Casa dei due atri sul piano {...}. Descrizione: Bronzo. Fanciullo che si erge da una foglia di acanthus con le braccia tenenti in segno di adorazione, con tratti somatici ben marcati e di altezza cm. 28.'

Scheda no. E 2214 bis: 'Trafugato 1975 - recuperato 1976. Provenienza: Cardo III Superiore sul piano stradale a m. 0,90 della porta della Casa dei due atri. Stato: cattivo, mancano le dita della mano destra ed un piccolo frammento della foglia; incrostata in neri punti. Dimensioni: Larghezza m. 0,09; Altezza m. 0,28. Descrizione: Bronzo - Scultura raffigurante una figurina fantastica a mezzo busto derivente in acanto con le braccia allargate e tese in basso, e dai tratti somatici ben marcati. Capigliatura inanellata con un {...} alto sulla fronte - Solo la testa è piena {...} le braccia. Il corpo è caso. Bibliografia: J. Deseureux, *Archéologia* 90 (1976) p. 63.'

Table; Collegio degli Augustali, room a (Cat.no. 17); *Libr. trov.* no. E 2236: 'Data 20-2-61, Collegio degli Augustali, ambiente a destra entrante dal III Cardo. Legno (Carb.) Tavolino a piano rotondo con due piedi rintagliati raffiguranti due zampe e testa e corpo di levriero. Manca il III piede.'

Scheda no. E 2236: 'Coll. Def. Ufficio ... Coll. Già nell'officina restauro carbone. Oggetto: Legno - Tavolo a 3 piedi con piano rotondo. Prov. Collegio degli Augustali, ambiente a destra entrando dal III Cardo. Alt. m. 0,64, spess. piano m. 0,04, Diam. piano m. 0,52. Stato: frammentario, manca di un piede e di parti di un'altro - Il piede è tutto screpolato. Restauro: reintegrato con pezzo colorato di marrone il piede mancante e parte del secondo piede. Reintegrato il piano [inulsito] di cera - Descr. Tavolo a 3 piedi (1a parte del 2o restaurati e reintegrati) con piano circolare moderato al bordo. I piedi sono decorati da protomi di levrieri con le teste poste in direzione dell'attacco del piede al piano ed dimoveano con le zampe deteriori i lati della gamba del tondo; questa termina, all'estremità in un piede, efflorescente in unghie bi{fuse}.'

Leg, bronze; *Libr. trov.* no. E 2250: 'Data: 16-5-1961. Posto: Ins. VI 17, Casa del colonnato tuscanico. Dimensioni: Altezza cm. 38. Descrizione: Bronzo. Piede di letto.'

Appliqué for furniture, bronze; *Libr. trov.* no. E 2266: 'Data: 16-5-1961. Posto: Casa del colonnato tuscanico. Descrizione: Bronzo. Applicco raffigurante una faccia di donna. La mano destra poggia nella testa e la sinistra sforgente in avanti. Misura cm. 8,5 per 9.'

Scheda no. E 2266: '(Trafugato 1975/ recuperato 1976) Provenienza: Casa del colonnato tuscanico, n.17, Ins. VI, Cardo III (incrocio con il Decumano Massimo). Stato: integra, ricoperta di una strata di crosta {...}. Dimensioni: Larghezza mass. m. 0,08; Altezza mass. m. 0,09; Spessore m. 0,0025. Descrizione: Bronzo, 'Applique' con busto muliebre: braccio destro {...} ad arco sulla testa, spalla sinistra tunicata, mano sinistra sporgente all'altezza del petto. La figura è racchiusa tra due {...} floreali che dalle spalle si riuniscono al centro in basso.'

The piece is published by Cerulli-Irelli (1974, 110-111 and fig. 77).

Appliqué for furniture; Casa del Colonnato Tuscanico, room 11; *Libr. trov.* no. E 2271: Data 16-5-61 Casa del colonnato tuscanico. Bronzo, Applique. Figura di guerrier a cavallo. Misura cm. 12 x 11.5.'

Scheda no. E 2271: '(trafugato vedi lettera 344 del 5-8-75) Descrizione: Bronzo 'Applique' con guerriero a cavallo; il cavaliere leve in alto lo scudo e il cavallo è ritratto in atto di stramazza {ampro paneggio} Provenienza: Casa del colonnato tuscanico N.17 Ins. VI, Cardo III (incrocio con il Decumano Massimo) La. Mass. m. 0,11 A. Mass. m. 0,145. Stato: integro.' The piece is published by Cerulli Irelli 1974, 109-110 and fig. 76.

Rack; Casa del Colonnato Tuscanico, room 2, taberna; Cerulli Irelli (1974, 20-21) gives the following description: 'Su ambedue le pareti si rinvennero incastri di travicelli lignei orizzontali: uno sulla parete orientale e ben nove su quella opposta; sono travicelli a sezione quadrata o rotonda e di dimensioni leggermente differenti fra loro (lato o diametro variante tra i 10 ed i 6 cm.), disposta in maniera disordinata ad eccezione di sei centrali in tre filari orizzontali; questi ultimi costituiscono certamente il sostegno di uno scaffale simile a quello della taberna n. 12 della casa insula V n. 11.'

Chest; *Decumanus Maximus* (Cat.no. 41); *Libr. trov.* no. E 2323: 'Data 1-8-61, Decumano Massimo, Lato NE. Legno, Cassa capovolta a forma di ripostiglio in legno carbonizzato in discreto stato di conservazione. Misura m. 1 di lunghezza e m. 0.63 di larghezza. E' alta m. 0,45; nell'interno si sono rinvenuti frammenti di focaccia e stoffa.'

Appliqué for furniture; *Libr. trov.* no. E 2474: 'Data 21-11-61 III Cardine Superiore (all'incrocio con il Decumano Massimo. Bronzo. Applicco raffigurante una ninfa seminuda seduta a sdraia, poggia il braccio destro sulle ginocchie e il braccio sinistro su di un'anfora da cui trabocca acqua. Ben conservata con i lineamenti ben marcati; di forma triangolare. Misura cm. 19 di lunghezza e cm. 15 di altezza.'

Scheda no. E 2474: 'Descrizione: Bronzo: 'Applique' ad altorilievo con figura femminile abbandonata su una roccia; il braccio destro è allungato sul corpo, il sinistro poggia su un'anfora che versa acqua; gambe drappeggiate da un fluente panneggio, busto nudo. Provenienza: Cardo Superiore III (all'incrocio con il Decumano Massimo, Lu. m. 0,20, La. m. 0,065, Alt. m. 0,15. Stato: ottimo.'

Human feet, bronze; *Libr. trov.* no. E 2546: 'Data e posto incerti. Descrizione: Bronzo. Piedi piccoli, a coffee tagliati alle caviglie e {...}. Probabilmente finimenti di mobili integri.'

Scheda no. E 2546: 'Provenienza incerta. Stato: buono. Dimensioni: Lunghezza m. 0,07. Descrizione: Bronzo - Due piccoli piedi con caviglia; sono cavi (destro e sinistro) probabilmente decorazioni di mobili o altra.'

Human feet, bronze; *Libr. trov.* no. E 2547: 'Data e posto incerti. Descrizione: Piedi piccoli a coffee tagliati alle caviglie e corvi, probabilmente finimenti di mobili integri.'

Scheda no. E 2547: 'Provenienza incerta. Stato: buono. Dimensioni: Lunghezza m. 0,07. Descrizione: Bronzo. Due piccoli piedi con caviglia (destro e sinistro); sono {...}; probabilmente decorazioni di mobili o altro.'

Bed leg; *Libr. trov.* no. E 2710: 'Provenienza e data incerte. Bronzo. Basetta (probabilmente piede di letto) a sezione rettangolare, sagomata in basso e con le tracce dell'attacco in alto; in due pezzi. Altezza m. 0,285; largh. m. 0,075.'

Scheda no. E 2710: 'Descrizione: Bronzo, Frammenti N°. 2 di una basetta a sezioni rettangolare modanata in basso e con le tracce per l'attacco in alto (forse appartenente a un letto o basetta di erma). Provenienza e data incerte. Lu. m. 0,285; La. m. 0,075; stato: frammentario; La. m. 0,077, Lu. m. 0,282, A. 0,029.'

Corner brackets for a bedframe, bronze; *Libr. trov.* no. E 2711: 'Provenienza e data incerte. Descrizione: bronzo: frammenti no. 2 di lamine ripiegate in due; probabili decorazioni di angoli di mobili con decorazioni impresse. Lunghezza m. 0,36 e m. 0,25.'

Scheda no. E 2711: 'Provenienza: incerta. Stato: Frammentario. Dimensioni: Lunghezza I 0,37, II 0,255; Altezza 0,04 x 0,03. Descrizione: Bronzo - N. 2 frammenti di ornamento di un mobile o altro, irricostruibili; sotto la crosta si intravede una decorazione con una rosetta a 16 petali e una fascia con foglie lanceolari, foglie d'edera e corimbi.'

Leg base, bronze; *Libr. trov.* no. E 2781: 'Data e posto incerti. Descrizione: Bronzo - Pezzo di mobile costituito da una parte cilindrica sagomata e da una parte a sezione quadrata con due elementi di incastro. Lunghezza mass. m. 0,11.'

Scheda no. E 2781: 'Provenienza incerta. Stato: integro incrostato. Dimensioni: Larghezza m. 0,08 (con l'incastro); Altezza m. 0,11; Diam. piede 0,045. Descrizione: Bronzo - Piede di mobile a base cilindrica sagomata con una sezione superiore quadrata e cava da cui sporgono due elementi a incastro con fori {...}.'

Corner brackets for a bedframe, bronze; *Libr. trov.* no. E 2784: 'Data e posto incerti. Descrizione: Bronzo, Frammenti no. 3 di cornicette costituiti probabilmente elementi angolari di decorazioni di mobili; lunghezza m. 0,23; m. 0,22; m. 0,15.'

Scheda no. E 2784: 'Provenienza incerta. Stato: Frammentario, leggermente incrostati. Dimensioni: Lunghezza A 0,23; B 0,22; C 0,15. Descrizione: Bronzo - Gruppo di n. 3 frammenti irricostruibili di cornici costituenti probabilmente elementi angolari di mobilio.'

Corner bracket for a bedframe, bronze; *Libr. trov.* no. E 2786: 'Data e posto incerti. Descrizione: Bronzo. Lastrina rettangolare con tracce di legno carbonizzato su ambedue le facce; m. 0,15 x 0,125.'

Scheda no. E 2786: 'Provenienza incerta. Stato: lastrina integra presenta incrostazioni - il legno è perduto da un lato, ne sono visibili le tracce da esso lasciate nel metallo. Poche tracce sull'altro lato. Dimensioni: Larghezza m. 0,15 x 0,125; Altezza {...} lastrina 0,002. Descrizione: Bronzo - Lastra rettangolare (forse coperchio di uno scrigno) con tracce di legno carbonizzato su tutte e due le facce - Una delle quale presenta una scorniciatura ed una {...}.'

Hinge segment, bone; *Libr. trov.* no. E 2811: 'Data e provenienza incerta. Stato: integra. Dimensioni: Altezza 0,093; Diam. mass. 0,03. Descrizione: Osso, Cerniera cilindrica con due fori sulla faccia e linee parallele incise su una base.'

Hinge segments, bone; *Libr. trov.* no. E 2812: 'Data e provenienza incerte. Stato: integre. Dimensioni: Altezza 0,025; Diam. m. 0,03. Descrizione: Osso, N. 6 Cerniere cilindriche con un foro sulla faccia.'

Hinge segment, bone; *Libr. trov.* no. E 2853: 'Data: luglio 1962. Provenienza: Nuovo Edificio sul Decumano Massimo, ambiente N. 1, piano superiore (corridoio). Stato: mancante solo di una piccola parte. Dimensioni: Lunghezza 0,087; Diam. 0,022. Descrizione: Osso grigio. Cerniera per mobile decorata con cerchi incisi.'

Bronze appliqué for furniture; *Libr. trov.* no. E 2876: 'Data 30-11-65 Nuovo edificio sul Decumano Massimo sotto i resti del pavimento in cocciopesto del corridoio di accesso al piano superiore. Bronzo. Framm. N° 3 (parte fuso) facenti parte della decorazione, non chiaramente ricostruibile, applicate ad un mobile di legno, di cui rimano, aderenti al bronzo, tracce carbonizzate; sotto le incrostazioni si possono però riconoscere elementi di serratura; lungh. mass. dei 3 frammenti m. 0,08; m. 0,06; m. 0,06.'

Scheda no. E 2876: 'Descrizione: frammenti, in parte fuse, non chiaramente ricostruibili, della decorazione di un mobile, di cui restano aderenti al bronzo tracce carbonizzate. Si possono riconoscere elementi di serratura e forse piccoli frammenti di ferro. Prov. Dec. Mass. - Nuovo scavo (nel pavimento del piano superiore). Lu. mass. cons. del framm. m. 0,08. Stato: pessimo.'

Chest?; building on the *Decumanus Maximus*; *Libr. trov.* no. E 2885: 'Data 17-6-66 Nuovo edificio sul Decumano Massimo - Piano Superiore. Ambiente Dipinto N° 6. Legno carbonizzato. Bronzo e ferro. Frammento di cassetta, con complesso sistema di serratura formato da vari elementi di bronzo e ferro, ossidiati ...'

Scheda no. E 2885: 'Descrizione: Bronzo, ferro e legno: grumo carbonizzato, probabilmente una cassetta di legno contenente fra altri elementi in ferro, chiodi, cerniere e catenelle con elementi di serratura in bronzo. Prov.: Nuovo Edificio (piano superiore Ambiente N° 6). Decumano Mass. Lu. mass. cons. m. 0,23; La. mass. cons. m. 0,13; spess. mass. cons. m. 0,65. Stato: frammentario.'

Two legs for furniture; *Decumanus Maximus*; *Libr. trov.* no. E 3032: 'Data 20-1-68 Nuovo scavo sul Decumano Massimo pianterreno, sul balcone della bottega N° 4. N° 2 piedini ad incontro che erano applicati ad un mobile; integri; presentano tracce di ferro ossidato. Lu. m. 0,075; Alt. m. 0,04.'

Scheda no. E 3032: 'Descrizione: Bronzo: N° 2 rivestimenti rettangolari di zampe di mobile con prese di fissaggio. Provenienza: Bottega N° 4 Decumano Massimo, Nuovo scavo, pianterreno (sul balcone di vendita) 20-1-1968. Lu. prese di fissaggio m. 0,035; la m. 0,58 x 0,036 A. 0,035. Ingombro minimo 0,07. Cons. Integro, tracce di ferro ondato.'

Wooden bed legs with bronze casing; Boube-Piccot (1975, 374) mentions two pieces: '78) Deux jambages d'un lit, découverts dans l'atelier no. 5 de l'Insula Orientalis II - in situ.' The words 'in situ' possibly reflect the fact that two legs found elsewhere are exhibited in a display case in this shop.

Bed leg: *Scheda*: 'Cassetta L/M L/1. Data del rev. febbraio 1982. Coll. Ex antiquarium Bacteca N° 9. Oggetto: piede di mobile. Dimensioni: Lu. frammento ricomposto m. 0,15. Stato: restano 5 frammenti di cui uno non ricomponibile. Descrizione: Legno - piede di mobile carbonizzato realizzato con perno centrale nel quale si infilano gli elementi modanati.'

Table; Casa dell'Atrio a Mosaico (IV 1-2)? (Cat.no. 14); *Libr. trov.* (numbered in pencil) 4: 'Collocazione Casa dell'atrio a mosaico; Descrizione: Legno, tavolino (mensola) rotondo a tre piedi decorati con protomi di feline scolpite nel legno. Provenienza: incerta. Alt. m. 0,67, Diam. del piano m. 0,57. Stato: discreto, è completamente carbonizzato ed in parte restaurato.'

Table leg: *Scheda*: 'Cassetta L/M L/1 Data rev. Febbraio 1982. Coll. Ex Bacteca N° 9 Antiquarium. Oggetto: piede di tavolo? Dimensioni: Lunghezza max. cons. 13, Diam. max. 3. Stato: resta 1 frammento. Descrizione: frammento di piede di tavolo carbonizzato.'

APPENDIX 2

UNIDENTIFIED FRAGMENTS

This appendix covers a number of wooden fragments which are deposited in a storeroom in the south-east corner of *Insula* VI (VI 6, room N). All these fragments may well have come from pieces of furniture, but the type of furniture involved is not certain.

Fragment of a bench? See fig. 173.

Max. preserved height: 140 mm.; max. length 90 mm.; breadth 34 mm.

The fragment is flat on two opposite sides and convex on the other two. In the middle of the flat sides there is a small square hole, which may have been where another element was attached. There are cracks in the top and the bottom.

Fragment of a chair or stool? See fig. 174.

Max. preserved height: 230 mm.; length 25 mm.; breadth 25 mm. Intact holes: 35 x 5 mm.

Lath with cracks at both ends. The fragment has four rectangular holes arranged in pairs. They once formed part of mortise-and-tenon joints.

Fragment of a bench? See fig. 175.

Max. preserved height: 70 mm.; max. preserved length: 40 mm.; max. preserved breadth: 30 mm.

The fragment has the form of a scroll, which may have served to decorate the leg of a bench. Cf. cat.no. 26.

Six fragments. See fig. 176.

Max. preserved height: 170-190 mm.; max. length: 35 mm.; depth: c 15 mm.

All the fragments are thin straight laths, which each (with one exception) broaden at one end into an area containing a circle. In one piece there is a hole in the middle of the circle. Nothing is known about the original function.

APPENDIX 3

CASTS OF WOODEN FURNITURE IN POMPEII

The following descriptions of casts and finds of wooden furniture from the excavation in Pompeii is necessarily restricted to those pieces which have been made available for study.

Casa del Sacello Iliaco (I 6, 4): two beds

Plaster casts were made of two beds in the Casa del Sacello Iliaco. The boards of the bed in *cubiculum* 1, to the east of the *atrium*, are panelled (figs. 177-179 and 200 A). Large parts of the left-hand board, the top edge of the rear-board and an indecipherable impression of the right-hand board are still preserved. The lower part of the bed is wholly buried in sand. The top surface of the bed itself has been given a modern cement skim. The remains of the rear board (where it meets the left-hand board) are c 24 cm. high and 22 cm. long. A vertical strip and a panel are visible, but it is impossible to judge variations in depth between the different parts of the board. The left-hand board stands against an *opus craticium* wall which carries a Fourth Style painting. The piece is discussed several times in the archaeological literature.⁹⁰⁴ The bedframe measures 2,31 x 1,32 m. In the reconstruction drawing by Spinazzola (1953, 450 fig. 513) the boards are correctly depicted with a division into two rows of panels, one above the other, with three rows on the short ends and nine on the long rear board. The reconstruction of the bedframe and the supporting structure is not correct. The front side-rail was horizontal and not curved as in the drawing. The bedframe would have been supported on legs rather than the curious structure depicted. The boards would have been thinner than those in the drawing.

According to the excavation reports, the second bed (fig. 180), in *cubiculum* d, to the west of the *fauces*, carried bone attachments (NSc 1912, 408 and Spinazzola 1953, 446: 'ed ornano la spalliera ..., divisa in due zone, rimastivi in sito, di un commesso di filletti di osso in riquadri verticali'). There are remains of three boards (which are now kept behind glass) and of the bedframe (which is full of sand). The boards are assembled from horizontal planks. The bed stands against a Fourth Style wall painting. This bed also appears several times in the archaeological literature.⁹⁰⁵ The bedframe measures 2,35 x 1,24 m. In the reconstruction drawing by Spinazzola (1953, 449 fig. 510) a complete bedframe is added, following the model of the beds depicted in the *salutatio* scene from the monument of Vestorius Priscus outside the Porta Vesuvio in Pompeii.⁹⁰⁶ It shows the boards panelled with bone strips. Originally the boards would have been mounted on the edges of the bedframe, and not on the floor as in Spinazzola's reconstruction. They would also have been thinner.

Casa dei Ceii (I 6, 15): cupboard (figs. 181 and 200 B-C)

In the front right-hand corner of the *atrium* stands the cast of a large wooden cupboard. The cast reflects the outsides of the back (1,58 x 1,23 cm.) and the left-hand side (1,43 x 0,73 m.) of what was originally a rectangular cupboard. The surfaces consist of a number of stiles within which recessed panels are fitted. There are thirteen vertical elements (stiles and panels) in the back and eleven in the side of the cupboard. The back also contains part of the top rail. This supported the roof-plate of the cupboard of which a cast could not be made. The right-hand side exhibits no panelling and must be regarded as a modern addition. The same applies to the front, in which the impressions visible are those of the shuttering used in making the casts. In the middle of the front we can see a metal element which may have been part of the lock: position (from left to right) 70-74 cm., (from bottom to top) 99-104 cm.. The four legs upon which the piece now stands are modern. Modern tie rods have been fitted inside. Since the cast was made, cracks have

⁹⁰⁴ Elia 1932, 420 (where the house is given an old number, viz. II 7, 2); Spinazzola 1953, 31 and nota 31, 446, 450 fig. 512-513; Strocka 1984, 130 and Taf. 53, 2 ('einen stattlichen *lectus*'); Faust 1989, 198 Kat. 298 (she mistakenly thinks the bed is inlaid with bone). There is a photo in: Baldassarre 1990 I, 317.

⁹⁰⁵ Spinazzola 1953, 31 and nota 31, 446, 449 fig. 510-511; Strocka 1984, 128 and Taf. 57,2 and 58,1; Faust 1989, 198 Kat. 298; Baldassarre 1990 I, 293 (photo).

⁹⁰⁶ Cf. Mols/Moormann 1996.

appeared which have been plastered over. The bottom, which is probably also modern, sags downwards.⁹⁰⁷

Casa di Fabius Amandio (I 7, 2-3), room c, to the east of the fauces: cupboard (fig. 200 D)

Plaster cast of one side of a cupboard with panels (height x width: 90 x 63 cm.). The panel consists of a moulding with a flat rail above it. Above this the surface is divided by stiles which are alternately set back and flush with the rail.

House I 7, 5: chest

Set up in the central room at the front of this house there is a cast of two sides of a chest, one long and one short. It is mentioned in the NSc 1927, 16.

Casa dell'Efebo (I 7, 11): bed (fig. 182)

At the back of the Casa dell'Efebo, in an unusually small *cubiculum* in the south-west corner of the north side of the *atrium*, there is the impression of a bed. This *cubiculum* could be closed off with doors, of which the left-hand leaf is preserved in a cast. The bed, which takes up the full length and two-thirds the breadth of the room, seems not to have been fully excavated. In the front the negative impression of the front side-rail can be seen. Beyond this no details can be distinguished. The bed is published in the NSc 1929, 355 no. 3 (drawn in on the map) and 359. According to the final passage here the boards were decorated with strips of bone in a geometric pattern.

In room 17 of the same house, a *triclinium* opening onto the garden, the remains of three *lecti tricliniarii* are reconstructed. In the current arrangement only the bronze legs are antique; all the wood is modern and does not accurately convey the original situation.⁹⁰⁸

Casa di Cerere (I 9,13): two cupboards, three beds, a storage piece and a fragment of another piece of furniture.

Room h, to the west of the *fauces*, contains a number of casts.⁹⁰⁹

1. Cupboard: back and right-hand side (figs. 183-184 and 200 E-G; height c 108 cm., length back 80 cm. and right-hand side 48.5 cm.). The (plaster) cast preserves the slightly rounded projecting edge of the base board. There are also clear remains of a moulding along the top edge of the panel on the right-hand side. This cannot be distinguished on the back. The moulding projects c 85 mm. beyond the side of the cupboard and 90 mm. beyond the front, and is built up from various elements placed one above the other. In the left-hand corner of the moulding there is an inexplicable bulge. Vertical lines (12 lines at 17 mm. distance) are scored in the flat frieze which appears in the middle of the composite moulding. The first of a group of nine occurs at 335 mm. from the back, and a further three appear after a gap of 35 mm.. The only signs of the base are at the side, these being c 2.5 cm. high. The meeting of the side and back is correct, with the proviso that the construction of the two surfaces is different; hence the heights do not correspond.⁹¹⁰

2. Bed: two boards, rear board (length x height: 187 x 47 cm.) and right-hand side board (length x height: 63 x 47 cm.) meeting at right angles (fig. 185). The boards show no decoration or visible details. The front edge of the right-hand board is hollowed into a graceful curve. The cast is c 9 cm. thick and it is probably the back which is original. Here we can distinguish two joins between horizontal planks in the side board. A thin lath (c 1 cm. thick) possibly runs along the curved edge, but we cannot see what happens to it at the corner. The thickness of the side board (4 cm.) can be measured at the back, where we find a vertical seam running up the rear board at 4 cm. from the corner. The rear board too seems to be assembled from three planks, and is edged at the top with a lath.

3. Bed: the bottom of a bedframe (figs. 186-188 and 201 A; 187 x 115 cm.). The cement cast preserves parts of Grid B, which includes two auxiliary legs. Grid B is slightly displaced relative to the bedframe. The surface of the cast within the bedframe is rippled, which suggests that the underside of the mattress may be

⁹⁰⁷ The cupboard is dealt with in the NSc 1914, 292-293, by Budde 1940, 15 and Michel 1990, 22 and 25 (she gives a description of the remains and wrongly assumes that the vertical planking on the front and the right-hand side belong to the antique cupboard).

⁹⁰⁸ These couches are not included in Faust 1989.

⁹⁰⁹ The numbering of the rooms is taken from De Vos 1976, pl. 35.

⁹¹⁰ Cf. Baldassarre 1990 II, 208.

reflected in the cast. Approximately above the ends of the stretcher there are two wooden legs, square in section, each with an iron rod through the centre. More of the left-hand leg is preserved than of the right. The cast forms a single whole, even though the various elements have shifted and are now displayed upside down. Any construction which may have existed above the bedframe is not reflected in the cast. No seams of joints are visible in the corners of the bedframe. The cast comes from *cubiculum* c.⁹¹¹

4. Two timbers joined at right-angles (fig. 189): the shorter (length 39 cm.) is fitted square into the longer (length 66 cm.). This could have been part of a piece of furniture. The cast is in cement.

5. Fragment of a board from a bed (figs. 190 and 201 B; length x height 75 x 52 cm.). The cast is in plaster. It preserves a section of bedframe, with the inside of what was probably the left-hand board of the bed. The board contains three fielded panels. In the middle of the panels there are projecting rectangular plates. The top edge is slightly rounded, though here too only the front surface has been cast. Irregularities in the surface of the bedframe may represent vestiges of textile.

Room c, to the east of the *fauces*, has two small windows looking onto the street and a door into the *atrium*. It contains the cement cast (figs. 191 and 201 C-D) of the broad back (length x height: 108 x 70 cm.) and one short side (length x height: 63 x 70.5 cm.) of the bottom section of a cupboard. Again, only one surface of each side is conveyed. Casts were made by placing shuttering over the surface in question. The result is that the original thickness of the surfaces is not preserved, but only the surfaces themselves. The back is constructed from two legs which run the full height of the surface, between which the other features are built up. At the bottom we can see the edge of the base-plate. This projects slightly in front of the two legs. Above this is a board on the top edge of which we see the start of three vertical recesses (presumably panels). The two outer panels have small, slightly projecting, horizontal blocks at the bottom. The impression of the top right hand corner is missing. The panels are recessed 8 mm. on the side and 7 mm. on the back. The sills project c 12 mm.. The construction of the side is the same as that of the back. Again the base-plate projects slightly between the two legs. Above the board there are four vertical panels, which are separated by three stiles.⁹¹²

In *tablinum* j stands the shapeless cement cast of a fragment of furniture, possibly a chest (fig. 192). The outside reflects the antique situation, showing two panels joined at right-angles. In the short side (height x breadth: 59 x 60.5 cm.), which is virtually square, four planks on edge are surrounded by a slightly projecting frame (projection: 15 mm.). The frame is somewhat thicker at the bottom. In the long side (height x breadth: 59 x 88 cm.) the projecting frame is found only at the top and the right, and the planking cannot be distinguished. The top right-hand corner is slightly rounded. This is probably the cast of a chest for valuables, since fragments of iron and bronze plating (metal fittings) were found in the vicinity. The cast is 8 cm. thick.

Casa del Fabbro (I 10, 7): fragment of bed (figs. 193-195)

Dining room g, bordering the portico and looking onto the garden. Part of a bed still stands in a niche in the north-west corner of the room. The negative impression of c 40 cm. of the bedframe and a small section of the side board are preserved in the volcanic material. The area has not been completely excavated. Thus the front left-hand leg of the bed is still partially preserved in situ. Here we have an iron rod (diameter c 1 cm.) which runs precisely vertically through the turned wooden elements. Half way up the rod (full height includes a 3 cm. projection above the underside of the negative of the bedframe), the negative of one of the turned leg elements, with the pin still in it, can be felt through a hole (c 10 to 13 cm. under the negative of the bedframe). A sample of the wooden remains left in this leg was analysed and proved to be *fagus*. Two people died in this room during the eruption. Their skeletons are still present.⁹¹³

Casa di Pinarius Cerealis (III 4, b): fragment of bed (figs. 196-198 and 201 E-F)

In the small *triclinium* a, which has a door and a window looking onto the garden, there is a cast of fragments of the side and rear boards of a bed, with sections of the bedframe below. The length of the rear board is max. 1.28 m. and that of the side board max. 58 cm.. The height is max. 62 cm.. The height of the remains of the bedframe is max. 33 mm.. In general the backs are entirely plain, and are probably only

⁹¹¹ Cf. NSc 1958, 105; De Vos 1976, 40, 212 fig. 7 and 213 fig. 8.

⁹¹² Cf. Baldassarre 1990 II, 191.

⁹¹³ Cf. Elia 1934, 285-287; Budde 1940, 15 and 61 Abb. 5; Baldassarre 1990 II, 410.

casts of the shuttering. Initially, just above the bedframe, the boards project forward, above which they recede to form a hollow. Above this they are vertical. Between the hollow and the vertical section there is a horizontal seam, probably marking the place where two sections of the construction were joined together. A part of the top section of the rear board has been bent backwards during the eruption. In the corner there is an indentation in the side board. It is c 15 mm. broad and 20 mm. long, and the remains of an iron nail can be seen at 18 cm. above the bedframe. There is also a hole at 44.5 cm., and at the same height along the rear board there is a mortise (below) and the remains of a tenon (above). These tenons and mortises formed the joint between the two boards. A piece of the rear board is missing at the top on the left. To the right of this gap there is a vertical split from which the length of the rear board is measured. There is then an additional 11.5 cm., equal to the thickness of the side board. The boards have thus been slightly forced apart. There are traces of antique red paint at top left of the rear board. The whole thing stands on a modern support c 20 cm. high. There is no discernable wood grain and no indication of how the mattress was supported. We can probably read the actual thickness of the boards in the corner. The side board was fitted against the rear board. The figures are 15 mm. thick at the top and 30 mm. at the bottom.⁹¹⁴

Casa di Iulius Polybius (IX 13, I-3): four cupboards (fig. 199)

Plaster casts of four cupboards, which invite much closer study, were made in the *peristylum* of this house. In one of them the wooden core of a hinge segment is partly preserved and gives a very good idea of how such a cylinder was constructed. These cupboards will not be considered here, since the rights to publication remain with my Italian colleagues.⁹¹⁵

⁹¹⁴ The bed is dealt with in: NSc 1912, 60; Spinazzola 1953, 31 nota 31, 447, 693-695 and fig. 661.

⁹¹⁵ For the contents of these cupboards see, amongst others: Castiglione Morelli del Franco 1988, 222-223 cat. 28-31; id. 244-245 fig. 16-19; id. 249: she mentions four terracotta lamps, three intact (from cupboards I, III and IV) and one in fragments (from cupboard IV).

SUMMARY

WOODEN FURNITURE IN HERCULANEUM

Form, technique and function

This study deals with the wooden furniture which has come to light since the rediscovery of Herculaneum in the 18th century. The emphasis is on the form and function of the individual pieces and on the techniques employed in making them.

Chapter 1 lays out the basic parameters of the study. The term 'furniture' is defined and divided into various categories to embrace not only familiar items such as beds, tables, chairs and cupboards, but also objects like chests and household shrines (*aediculae*) which were a common feature of Roman interiors. Built-in fittings, such as racks supported by the walls behind them, are also considered as furniture for the purposes of this study. The circumstances under which wood has been preserved in an archaeological context is then examined. This is followed by a survey of the research into ancient furniture, notably of the poor coverage given to the Herculaneum furniture in the archaeological literature. This in spite of the fact that these finds represent the most extensive group of wooden furniture known from Classical Antiquity. The sorry conclusion is that the wooden furniture of Herculaneum has never been adequately published and therefore has never received its rightful place in the study of Roman furniture. We then move to the comparative material available for the Herculaneum furniture. Original wooden pieces from elsewhere in the Roman world are the obvious primary source, but casts of wooden furniture taken in Pompeii and furniture in materials other than wood are also valuable, as are contemporary depictions and remarks by classical authors. Although these various sources are not representative in themselves, when combined they give a reliable picture of wooden furniture in Roman times. The chapter closes with a discussion of the 'Nachleben' of the Vesuvian cities in the 18th and 19th centuries, when Roman wooden furniture played virtually no role in neoclassical furniture design.

Chapter 2 reviews the Herculaneum material. Of the numerous pieces of wooden furniture found since the beginning of excavations, 41 are preserved more or less complete or in fragments: thirteen beds, nine tables, three benches, a stool, and fifteen pieces of storage furniture. We examine what happened to the material at the moment of the eruption and then ask how the surviving stock of data (on the one hand the preserved pieces themselves, and on the other the excavation reports, which mention many more discoveries) should be evaluated. The surviving pieces are by no means perfect: they are carbonized and often in fragments. The carbonization of the wood was caused by the heat of the lava and by the subsequent exclusion of oxygen which immediately followed, a process comparable to modern charcoal production. However, other factors have caused further damage. These include the pressure with which the lava flow entered the houses, shifting and breaking up objects, and later exposure to oxygen leading to the decay of the wood. Moreover, many pieces were lost when the shafts of the eighteenth-century excavations were dug straight through them. The extant pieces were all recovered in this century. These have only survived because a new method of preservation had by then been developed: the application of paraffin-wax to the surface of the wood. These pieces are of great interest, because they give us the opportunity to study the form of the pieces and the techniques employed to make them. For furniture found in the preceding two centuries we have only the descriptions given in the excavation reports. These however give valuable information on form and technique, and (when the find context has been accurately recorded) on how the furniture was used.

The extant pieces of furniture from known find contexts all originate from the more recently excavated area of the town. They come from the upper floors as well as from the ground floors of buildings, usually from shops and houses. In addition to the paraffin-wax treatment, missing

sections have sometimes been restored and frames have been built to support the fragile material. Initially the frames were made of metal and wood, but these are now being replaced by perspex versions. The state of preservation varies from piece to piece: those which have been transferred to the Magazzino Archeologico (the site storeroom) are mostly in good condition, but those which still stand in the excavations are deteriorating rapidly due to environmental pollution and touching by tourists. In this chapter various sources (the excavation reports, the surviving pieces and fittings made of other materials, indications of furniture in the domestic architecture and decoration) are combined to gain an idea of the role of wooden furniture in the interiors of Herculaneum's houses.

The forms of furniture preserved in Herculaneum are discussed in Chapter 3. On the basis of the reference material reviewed in the previous chapter, we investigate whether the various categories of furniture found in Herculaneum occurred only in this town or were more widely spread in the Roman world. Beds and couches, tables, sitting and storage furniture are presented in turn. Three types of bed can be identified in Herculaneum: beds with high back and side boards mounted on the edges of the bedframe (here called 'beds with boards'); *biclinia* (two beds joined together at right angles); and children's beds, including a cradle. Of a fourth type, beds with a *fulcrum* (a curved rest mounted on one end of the bedframe), no wooden remains have survived. The great variety of 'beds with boards' found in Herculaneum and in depictions from elsewhere, justify the conclusion that this type of bed emerged in the 1st century B.C., much earlier than has been hitherto assumed. As regards the *biclinia* and the children's beds, no comparable pieces have been found outside Herculaneum, although their functional design suggests that such pieces must have been more widespread. The tables are all of the same type, although their details vary: three legs carved in animal leg form supporting what is usually a round tabletop. In one case the tabletop is crescent shaped. At two-thirds of their height these legs generally carry a carved decoration: a griffin's head, the head of a young Dionysus or a dog apparently coursing up the table leg. The design of the tables has Hellenistic antecedents, but the decoration can be regarded as a Roman innovation. Animal legs are also in evidence on three benches, although here they are much more stylized. This form also exhibits Hellenistic influences. The only preserved stool in Herculaneum has a seat decorated with a star in veneer mosaic. This makes the piece unique. The storage furniture includes cupboards, *aediculae*, racks and chests. On the basis of depictions we are able to conclude that lockable, freestanding cupboards were used all over the Roman world, although the examples in Herculaneum are the only surviving originals. The wooden *aediculae* are also unique as originals, but examples made of less perishable materials and stray finds of statuettes of household deities strongly suggest that wooden shrines occurred elsewhere with equal frequency. Similarly we can assume that racks in service rooms and shops, which are only preserved in this town, were also in use elsewhere. Finally, chests of various shapes were part of the inventory of many of Herculaneum's houses. From finds (especially of metal fittings) made in other places it is clear that chests were a regular feature in Roman houses. A chronological development of furniture forms or types cannot be established in Herculaneum; the snap-shot, frozen at the moment of the eruption, points to the simultaneous use of all the pieces which have come to light. Although there are similarities within the different categories of furniture, one gets the impression that there was no serial production. Evidence of the wider distribution of some of the types of furniture found in Herculaneum is provided by three pieces depicted on the Simpelveld sarcophagus (the Netherlands, c 200 A.D., fig. 10). These are a 'bed with boards', a round table on three legs and a cupboard with two panelled doors. On the other hand, other pieces depicted on this sarcophagus suggest that certain types of furniture, such as the wickerwork chair with back- and armrests, were familiar in other parts of the Empire but perhaps not in Herculaneum.

The materials and techniques used in manufacturing the Herculaneum furniture are presented in Chapter 4. The surviving pieces provide the starting-point for a general survey of the materials and techniques used by Roman cabinetmakers. Roman expertise owed a great deal to the Greeks, who in turn were indebted to the Egyptians. The chapter therefore begins with a discussion of the

materials and techniques used by Egyptian and Greek cabinet-makers. The Romans significantly refined these techniques, combining them with the skills already to hand in the Apennine peninsula. Technical skill reached such a high level in the Roman period that it has remained almost unchanged until the Industrial Revolution.

Having looked at the forerunners of the Roman cabinetmakers, we turn to the types of wood chosen for furniture as recorded by ancient authors. Our findings are then compared to the results of analyses of samples taken from the Herculaneum furniture. The conclusion is that ancient literary sources on their own are unreliable as evidence for the general use of timber. Indeed, some of the species identified in Herculaneum are not even mentioned in connection with furniture in the Classical sources. Most of the Herculaneum furniture was made of silver fir, while ancient sources primarily mention expensive woods in combination with costly furniture. We find that in Herculaneum hardwood was only selected for special purposes. The results of the wood analyses indicate that silver fir must have been widely available in the vicinity of the town. We can therefore assume that local woods would have been used for everyday furniture in other places, with special woods being imported for specific applications like turning, wood carving and veneer mosaic.

There follows a discussion of the tools used by Roman cabinetmakers, including those in Herculaneum. In the process the craft of furniture making and the different techniques employed by cabinetmakers are examined. The Herculaneum furniture here provides a wealth of information, allowing us to correct the general view of furniture making in Roman times. We look at woodwork joints, glues, turning, wood carving, veneer mosaic, wickerwork and various finishes. This is followed by an examination of furniture fittings made from other materials. The Herculaneum furniture provides new data on bronze encased furniture legs and bone hinges. When compared to the products of Greek cabinet-makers, the Herculaneum furniture reveals a substantial advance in technical skills. One example is the diversity of woodwork joints. For as long as there is no evidence to the contrary, it seems reasonable to assume that the picture presented by these pieces (which have survived entirely by chance) is not exceptional but rather representative of the state of Roman furniture technology at that time. While the preserved pieces do not tell us everything about local production, it is possible, given the widespread use of the locally available silver fir, that the lava still hides a number of local workshops. The size of the town and the relatively large amount of furniture per household certainly suggest that various workshops were active in the town. These would have probably been small in size and producing furniture for the local market.

Chapter 5 concentrates on the function of the wooden furniture in Herculaneum. We begin by asking whether any real insight can be gained from these pieces into the use of Roman domestic space. We therefore examine the Roman household in order to form a picture of the daily activities in the house, a subject which ancient historians have studied mainly in relation to houses with an *atrium* or those with an *atrium* and a *peristylum*. The layout of Roman houses is then discussed and on the basis of a passage in Vitruvius (c 20 B.C.) we look at the types of rooms which can be identified in Roman houses. Vitruvius makes a distinction between two types of rooms: private and public (*propria* and *communia*). This distinction only applies to larger houses which possess an *atrium* (or an *atrium* and a *peristylum*), where formal rooms take up relatively more space than more intimate private rooms. The majority of the houses in Herculaneum, however, differ from those described by Vitruvius and usually featured in the literature on the subject. Here *atria* and *peristylia* are frequently absent and thus the common theories on the *domus* and the layout of Roman houses are not immediately applicable. This study therefore chooses to distinguish between 'static' and 'dynamic' spaces in the houses of Herculaneum, a division which can be applied to all types of house. The former are real living spaces, built and equipped for lengthy occupation, while the latter are primarily passageways and connecting rooms but also include formal 'public' spaces. The smaller living units consist mainly of static spaces, which exhibit great similarities in all types of house. However, the larger the house becomes, the greater the relative area taken up by

dynamic spaces. This distinction is the starting-point for a discussion of the Herculaneum furniture in its original setting. We look at how the nature and location of the furniture can help us interpret the kinds of activity taking place in particular rooms and then, reversing the spotlight, at how architectural features and the find circumstances can shed light on the function of individual pieces of furniture. Two different approaches are adopted for this analysis: the pieces of furniture are analysed in terms of their form (beds, tables, chairs and storage furniture) and in terms of their function (eating, sleeping, working etc.). The conclusion is that wooden furniture was primarily used in the static spaces of houses in Herculaneum. The amount of wooden furniture would therefore have been relatively higher in the smaller living units than in the larger ones. From this we conclude that wooden furniture was rarely placed in a room simply to show the social status of the owner. This was in marked contrast to marble and bronze show pieces, which were generally placed only in dynamic, formal spaces. Most pieces of wooden furniture were in fact of practical use in the daily life of the local inhabitants.

In the catalogue the 41 preserved pieces of furniture are described according to a standard inventory model. Photographs and/or drawings of all the pieces are included. A summary of the excavation reports and other archive material referring to furniture found in the town is presented in Appendix 1. Appendix 2 lists unidentifiable fragments that possibly come from furniture. Appendix 3 covers the casts made of wooden furniture in Pompeii, an important corpus for comparison with the Herculaneum furniture which is the subject of this book.

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 CIL Corpus Inscriptionum Latinarum, Berlin 1893-
 DS Dictionnaire des antiquités grecques et romaines d'après les textes et les monuments,
 eds. C. Daremberg/ E. Saglio/ E. Pottier, Paris, 1877-1919.
 EAA Enciclopedia dell'Arte Antica, Roma 1958-
 LIMC Lexicon Iconographicum Mythologiae Classicae, Zürich 1981-
 NSc Notizie degli Scavi di Antichità, Roma 1875-
 RE Pauly's Realencyclopädie der classischen Altertumswissenschaft, hg. von G. Wissowa, W. Kroll,
 K. Ziegler, Stuttgart 1894-1980.
 SQ Die antiken Schriftquellen zur Geschichte der bildenden Künste bei den Griechen, gesammelt
 von J. Overbeck, Leipzig 1868.

Reference to periodicals is made using the list of abbreviations found in the Archäologische Bibliographie 1992, XXV-XL.

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LIST OF ILLUSTRATIONS

Key for the drawings: diagonal shading = crosscut wood; dotted areas = reconstructions; black-and-white chequered areas = modern elements; horizontal shading = bone in cross-section; scale: 1:20 = 1:20 cm.

The drawings and photographs have been made by the author, unless otherwise indicated; drawings 2-3, 96-97, 105-106, 114-115 and 122 were made in collaboration with W.A. Loerts.

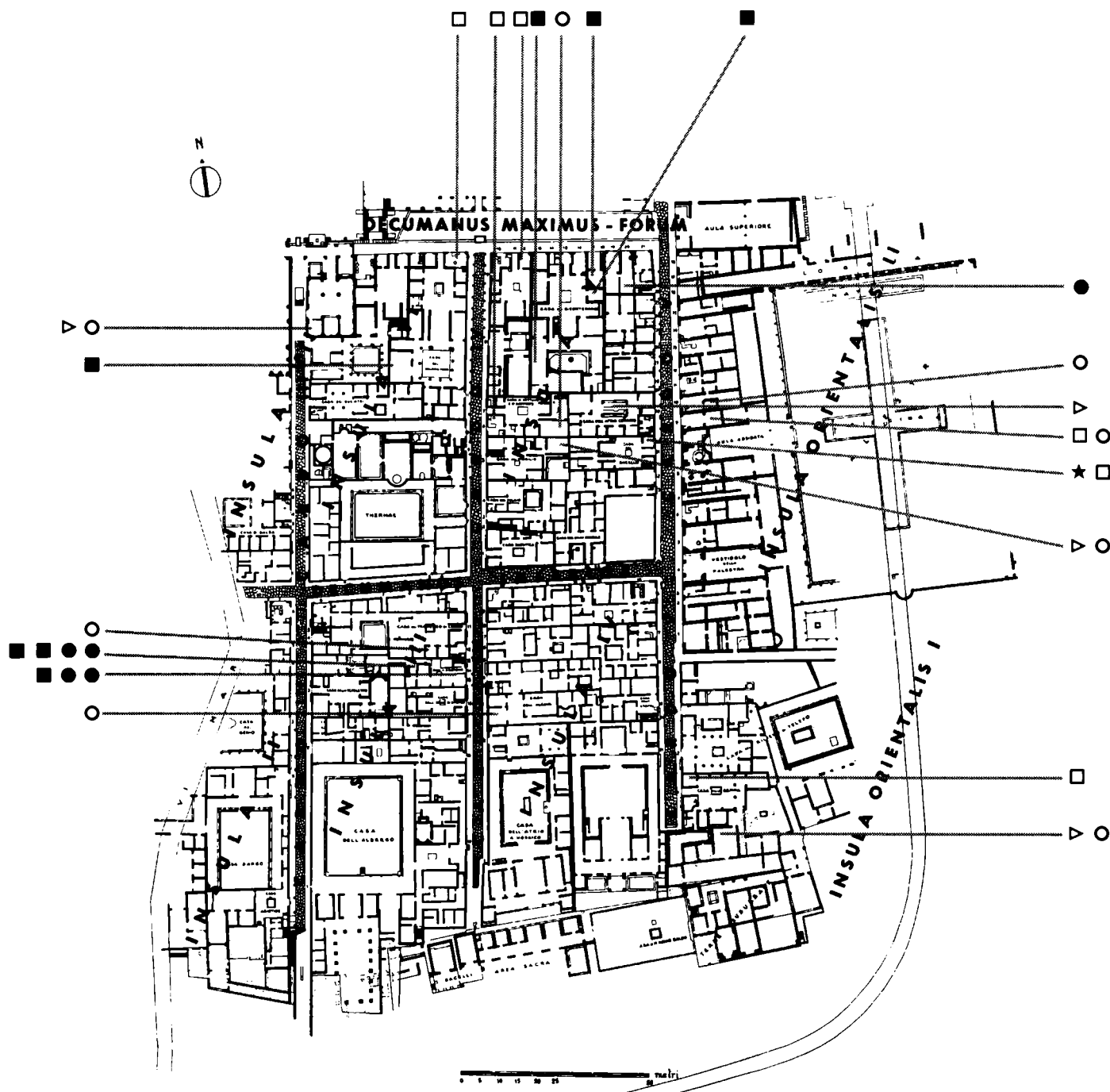
1. Plan of Herculaneum, indicating the findspots of the preserved pieces of wooden furniture.
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8. Detail from the east wall of *oecus* q in the Casa dei Vetti in Pompeii: cupboard-*aedicula* containing a statuette of Venus (top) and perfume bottles (bottom).
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10. Sarcophagus, found in Simpelveld (Netherlands), currently in the Rijksmuseum van Oudheden in Leiden (photo: RMO).
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66. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10).
67. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10), drawing.
68. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10); detail: remains of leg beneath bedframe.
69. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10); detail left-hand front corner bedframe (cf. fig. 67 F).

70. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10); detail frame right with element grid A.
71. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10); detail right-hand rear corner.
72. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); drawing, made by Oliva for Maiuri (1958).
73. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); situation before 1987.
74. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); situation before 1987; detail.
75. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); situation before 1987; detail.
76. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); prior to new reconstruction (1987).
77. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); prior to new reconstruction (1987); detail fig. 76.
78. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); after reconstruction (1987).
79. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11); after reconstruction (1987).
80. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11), drawing.
81. Couch from *Insula Orientalis II 9*, Herculaneum (cat.no. 12), drawing.
82. Couch from *Insula Orientalis II 9*, Herculaneum (cat.no. 12).
83. Couch from *Insula Orientalis II 9*, Herculaneum (cat.no. 12); detail rear side-rail bedframe.
84. Couch from *Insula Orientalis II 9*, Herculaneum (cat.no. 12); detail: notch for joining Grid B to bedframe.
85. Couch from *Insula Orientalis II 9*, Herculaneum (cat.no. 12); detail left-hand board.
86. Couch from *Insula Orientalis II 9*, Herculaneum (cat.no. 12); detail right-hand board.
87. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13); right-hand end.
88. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13), drawing.
89. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13); left-hand end.
90. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13); detail right-hand front corner bedframe.
91. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13); detail front edge right-hand board.
92. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13); detail boards, right-hand rear corner.
93. Couch from *Insula Orientalis II 10*, Herculaneum (cat.no. 13); detail centre rear board.
94. Table from Herculaneum (cat.no. 14).
95. Table from Herculaneum (cat.no. 14); detail: side-view leg.
96. Table from Herculaneum (cat.no. 14), drawing.
97. Table from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 15), drawing.
98. Table from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 15).
99. Table from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 15); detail, stretchers.
100. Table from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 15); detail, legs meeting tabletop.
101. Table from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 15); detail, tabletop.
102. Table from the Casa del Bel Cortile, Herculaneum (cat.no. 16).
103. Table from the Casa del Bel Cortile, Herculaneum (cat.no. 16); detail, side-view leg.
104. Table from the Casa del Bel Cortile, Herculaneum (cat.no. 16); detail, tabletop.
105. Table from the Casa del Bel Cortile, Herculaneum (cat.no. 16), drawing.
106. Table from the Collegio degli Augustali, Herculaneum (cat.no. 17), drawing.
107. Table from the Collegio degli Augustali, Herculaneum (cat.no. 17) (situation before 1987).
108. Table from the Collegio degli Augustali, Herculaneum (cat.no. 17); detail: side-view leg (situation before 1987).
109. Table from the Collegio degli Augustali, Herculaneum (cat.no. 17); detail: legs (situation before 1987).
110. Table from the Collegio degli Augustali, Herculaneum (cat.no. 17); detail: front-view leg.
111. Table from the Casa dell'Atrio Corinzio, Herculaneum (cat.no. 18).
112. Table from the Casa dell'Atrio Corinzio, Herculaneum (cat.no. 18).
113. Table from the Casa dell'Atrio Corinzio, Herculaneum (cat.no. 18); detail: tabletop.
114. Table from the Casa dell'Atrio Corinzio, Herculaneum (cat.no. 18), drawing.

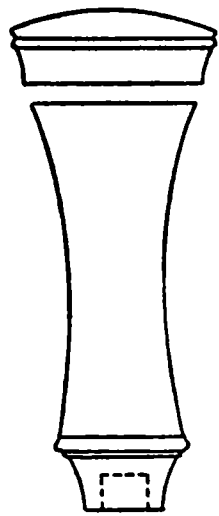
115. Table from *Insula Orientalis* I 1a, Herculaneum (cat.no. 19), drawing.
116. Table from *Insula Orientalis* I 1a, Herculaneum (cat.no. 19).
117. Table from *Insula Orientalis* I 1a, Herculaneum (cat.no. 19); detail: side-view leg.
118. Table from *Insula Orientalis* I 1a, Herculaneum (cat.no. 19); detail: rails under tabletop.
119. Table-leg, Herculaneum (cat.no. 20).
120. Table-leg, Herculaneum (cat.no. 21).
121. Table-leg, Herculaneum (cat.no. 22).
122. Table-legs from Herculaneum (cat.nos. 20-22), drawing.
123. Stool from Herculaneum (cat.no. 23).
124. Stool from Herculaneum (cat.no. 23); detail: leg.
125. Stool from Herculaneum (cat.no. 23); detail: seat.
126. Stool from Herculaneum (cat.no. 23), drawing.
127. Bench from the Casa del Sacello di Legno in Herculaneum (cat.no. 24), drawing.
128. Bench from the Casa del Sacello di Legno in Herculaneum (cat.no. 24).
129. Bench from Herculaneum (cat.no. 25): supports (situation in 1987).
130. Bench from Herculaneum (cat.no. 25): seat (situation in 1987).
131. Bench from Herculaneum (cat.no. 25): support (after cleaning).
132. Bench from Herculaneum (cat.no. 25), drawing.
133. Bench from Herculaneum (cat.no. 26).
134. Bench from Herculaneum (cat.no. 26); detail: legs right-hand end.
135. Bench from Herculaneum (cat.no. 26); detail: seat.
136. Bench from Herculaneum (cat.no. 26), drawing.
137. *Aedicula* from the Casa a Graticcio, Herculaneum (cat.no. 27), drawing.
138. *Aedicula* from *Insula* V 17, Herculaneum (cat.no. 28), drawing.
139. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29).
140. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29); detail: doors lower section.
141. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29); detail: base upper section showing veneer mosaic.
142. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29); detail: upper section.
143. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29); detail: upper section, capital and architrave with veneer mosaic.
144. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29); detail: upper section, architrave with veneer mosaic.
145. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29), drawing.
146. *Aedicula* from the Casa del Salone Nero, Herculaneum (cat.no. 30), drawing.
147. *Aedicula* from the Casa del Salone Nero, Herculaneum (cat.no. 30).
148. Amphora rack from *Insula* V 6, Herculaneum (cat.no. 31).
149. Amphora rack from *Insula* V 6, Herculaneum (cat.no. 31), drawing.
150. Amphora rack from *Insula* VI 12, Herculaneum (cat.no. 32), drawing.
151. Amphora rack from *Insula* VI 12, Herculaneum (cat.no. 32).
152. Amphora rack from *Insula Orientalis* II 9, Herculaneum (cat.no. 33).
153. Amphora rack from *Insula Orientalis* II 9, Herculaneum (cat.no. 33), drawing.
154. Rack from *Insula* V 12, Herculaneum (cat.no. 34).
155. Rack from *Insula* V 12, Herculaneum (cat.no. 34), drawing.
156. Cupboard (fragment) from the Casa a Graticcio, Herculaneum (cat.no. 35), drawing.
157. Cupboard from the Casa a Graticcio, Herculaneum (cat.no. 36), drawing.
158. Cupboard from the Casa a Graticcio, Herculaneum (cat.no. 36).
159. Cupboard from *Insula* V 17, Herculaneum (cat.no. 37).
160. Cupboard from *Insula* V 17, Herculaneum (cat.no. 37), drawing.
161. Built-in cupboard, Casa della Gemma, Herculaneum (cat.no. 38).
162. Cupboard, Casa del Bicentenario, Herculaneum (cat.no. 39); situation circa 1970 (photo: Soprintendenza Archeologica di Pompei).
163. Cupboard, Casa del Bicentenario, Herculaneum (cat.no. 39); situation in 1987.

164. Built-in cupboard, Casa della Gemma, Herculaneum (cat.no. 38), drawing.
165. Cupboard, Casa del Bicentenario, Herculaneum (cat.no. 39), drawing.
166. Cupboard, Herculaneum (cat.no. 40), drawing.
167. Chest, Herculaneum (cat.no. 41); back and right-hand side.
168. Chest, Herculaneum (cat.no. 41); front right-hand corner.
169. Chest, Herculaneum (cat.no. 41); detail: lock joint.
170. Chest, Herculaneum (cat.no. 41); detail: hinge.
171. Chest, Herculaneum (cat.no. 41), drawing.
172. Plan of the nineteenth-century excavations in Herculaneum; see appendix 1 (from: Ruggiero 1885, tav. XII).
173. Fragments of a bench? Herculaneum.
174. Fragment of a chair or stool? Herculaneum.
175. Fragments of a bench? Herculaneum.
176. Fragments of furniture? Herculaneum.
177. Plaster cast of a bed from the Casa del Sacello Iliaco, Pompeii (I 6, 4).
178. Plaster cast of a bed from the Casa del Sacello Iliaco, Pompeii (I 6, 4); detail left-hand board.
179. Plaster cast of a bed from the Casa del Sacello Iliaco, Pompeii (I 6, 4); detail left-hand board.
180. Plaster cast of a bed from the Casa del Sacello Iliaco, Pompeii (I 6, 4).
181. Plaster cast of the back of a cupboard from the Casa dei Ceii, Pompeii (I 6, 15).
182. Bed (fragment), Casa dell'Efebo, Pompeii (I 7, 11).
183. Plaster cast of a cupboard, Casa di Cerere, Pompeii (I 9, 13).
184. Plaster cast of a cupboard, Casa di Cerere, Pompeii (I 9, 13); detail moulding.
185. Cast of the boards of a bed, Casa di Cerere, Pompeii (I 9, 13).
186. Cast of Grid B of a bed, Casa di Cerere, Pompeii (I 9, 13).
187. Cast of Grid B of a bed, Casa di Cerere, Pompeii (I 9, 13).
188. Cast of Grid B of a bed, Casa di Cerere, Pompeii (I 9, 13).
189. Cast of a fragment of furniture? Casa di Cerere, Pompeii (I 9, 13).
190. Cast of the panelled board of a bed, Casa di Cerere, Pompeii (I 9, 13).
191. Cast of a cupboard (fragment), Casa di Cerere, Pompeii (I 9, 13).
192. Cast of a chest (fragment), Casa di Cerere, Pompeii (I 9, 13).
193. Fragment of bed, Casa del Fabbro, Pompeii (I 10, 7), room g.
194. Fragment bed, Casa del Fabbro, Pompeii (I 10, 7), room g.
195. Fragment bed, Casa del Fabbro, Pompeii (I 10, 7), room g.
196. Cast of a fragment of a bed, Casa di Pinarius Cerealis, Pompeii (III 4 b).
197. Cast of a fragment of a bed, Casa di Pinarius Cerealis, Pompeii (III 4 b); detail: end view of left-hand board.
198. Cast of a fragment of a bed, Casa di Pinarius Cerealis, Pompeii (III 4 b); detail: left-hand board.
199. Cast of a cupboard, Casa di Iulius Polybius, Pompeii (IX 13, 1-3); see appendix 3 (photo P. Bersch).
200. Casts of furniture from Pompeii, drawing.
201. Casts of furniture from Pompeii, drawing.

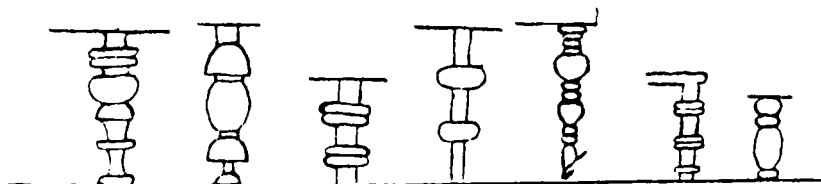
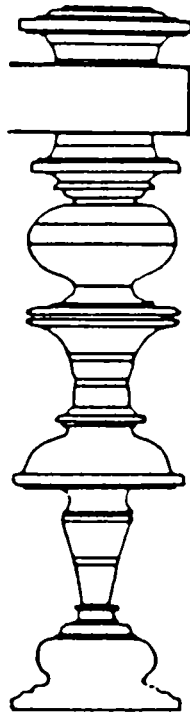


1. Plan of Herculaneum, indicating the findspots of the preserved pieces of wooden furniture: Key:

- = bed/couch
- ▷ = table
- ☆ = bench
- = storage piece
- open: from ground floor
- closed: from an upper floor

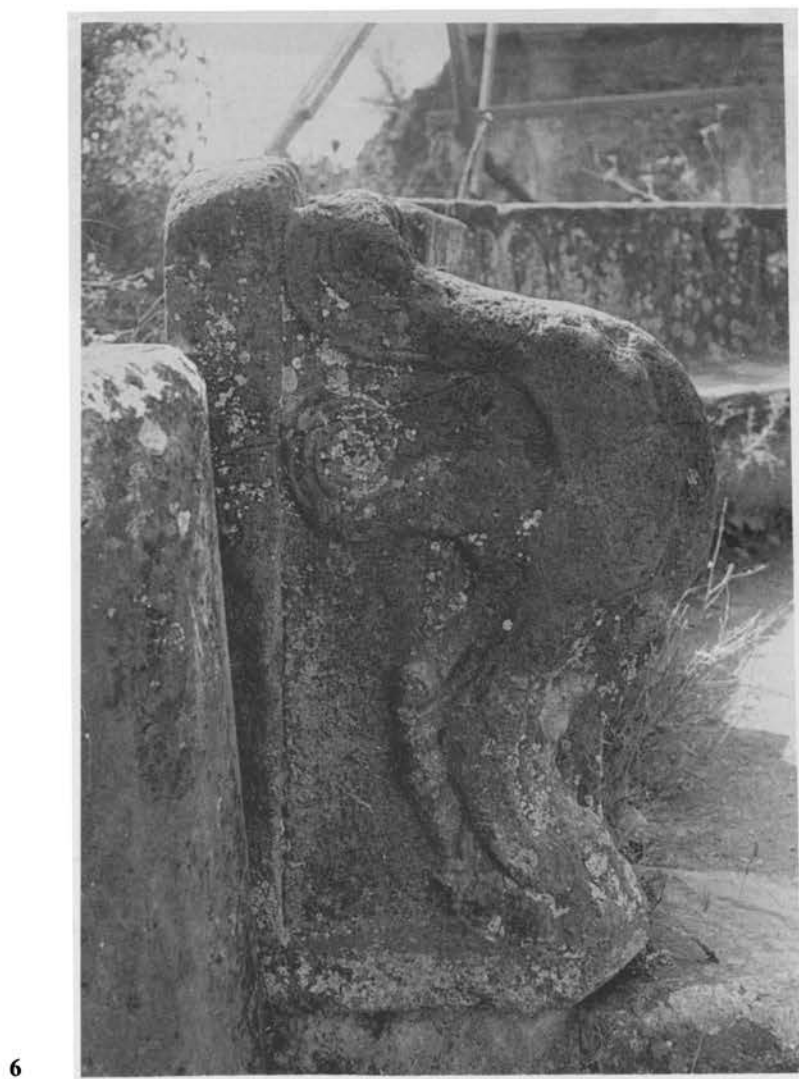
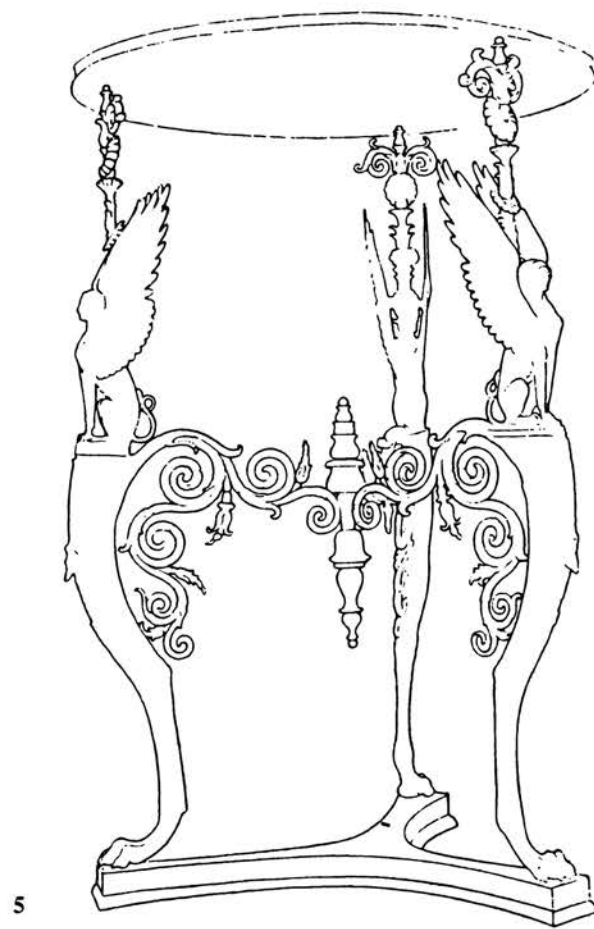


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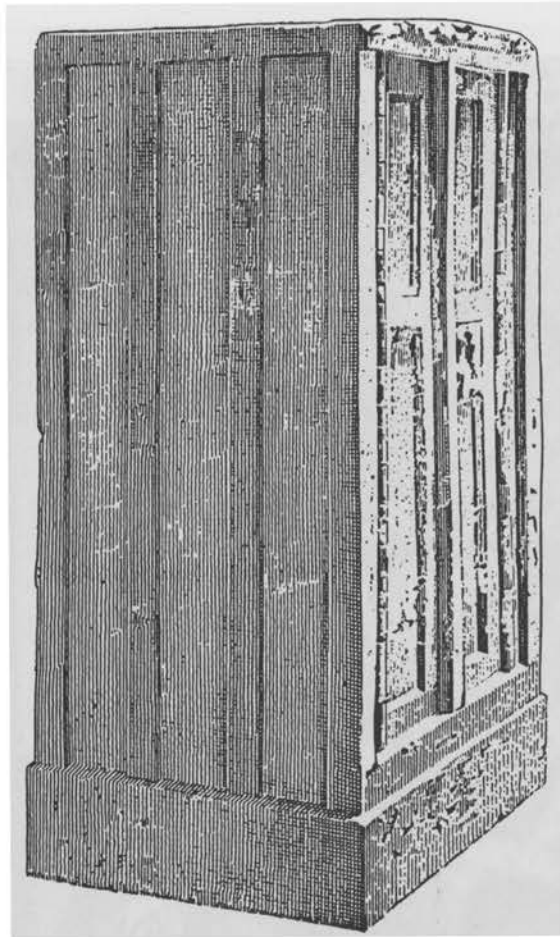


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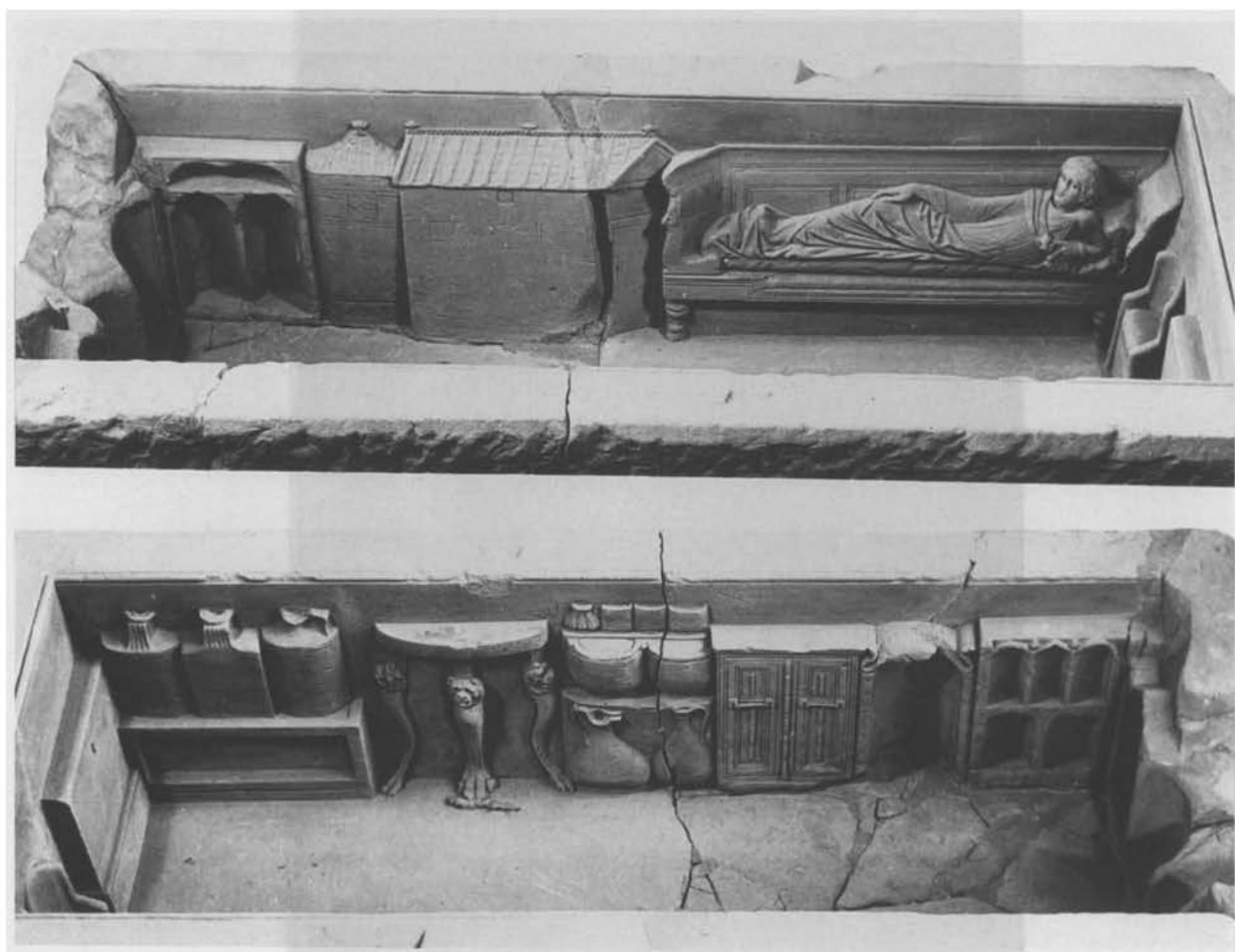


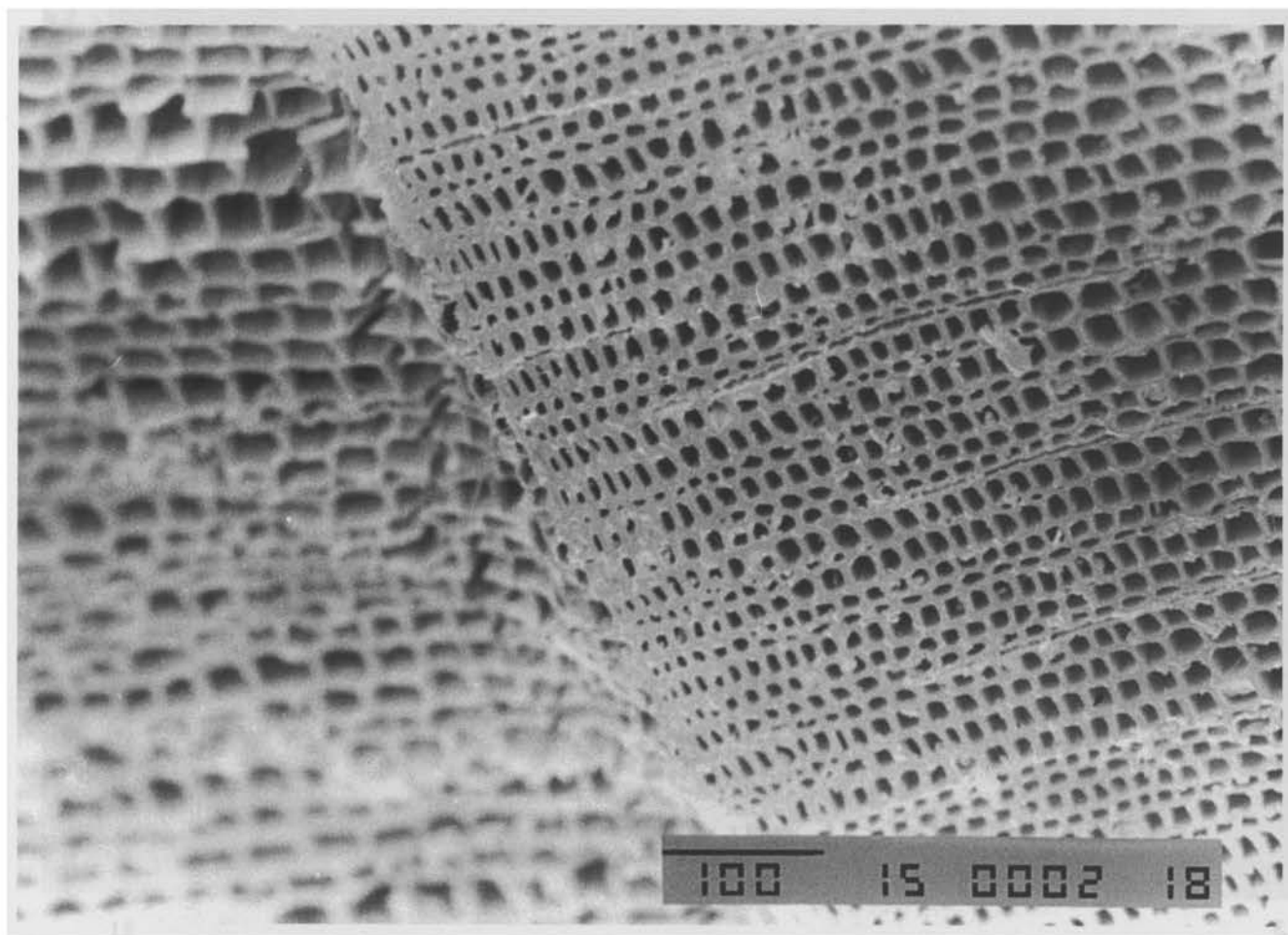
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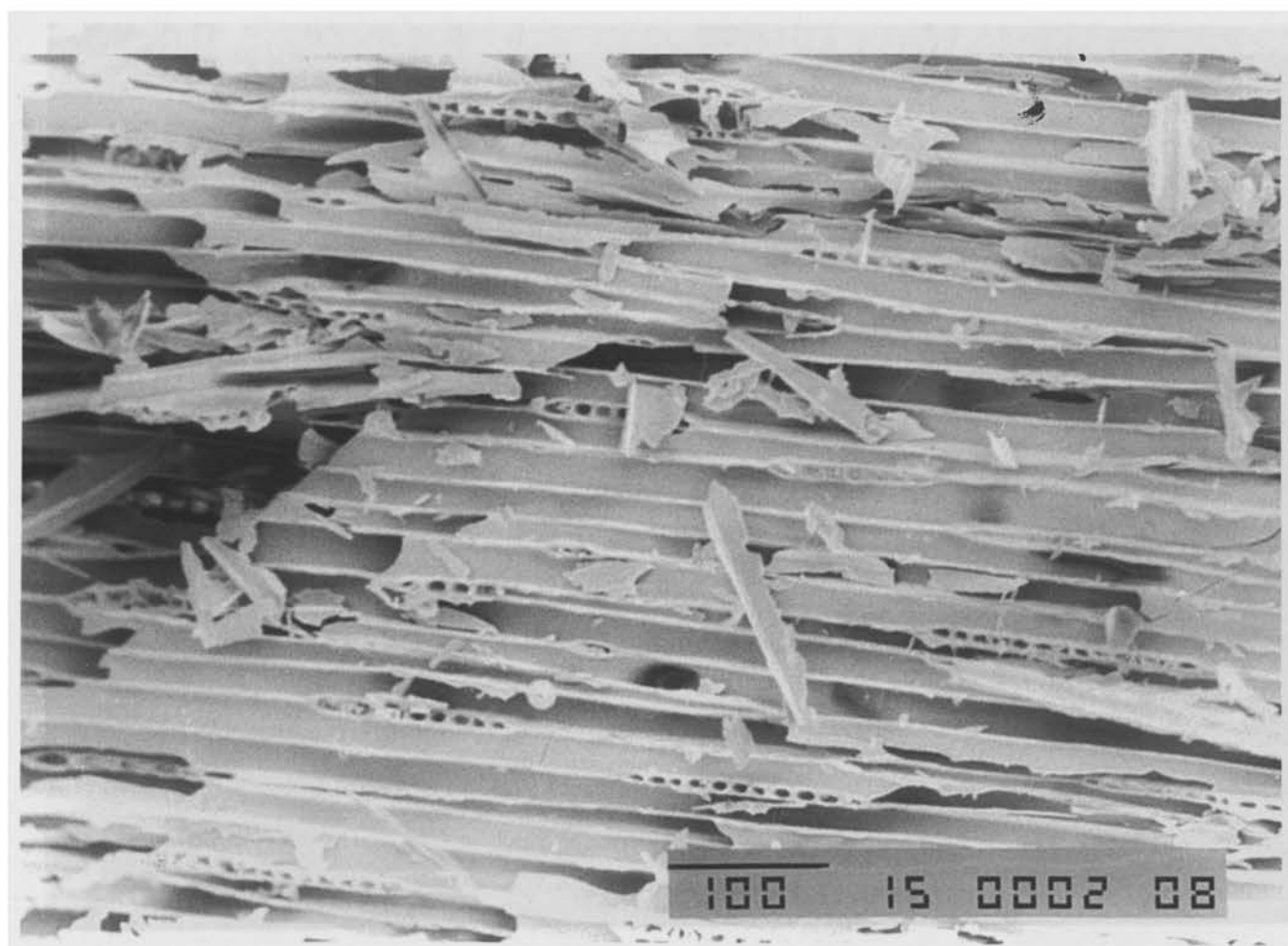


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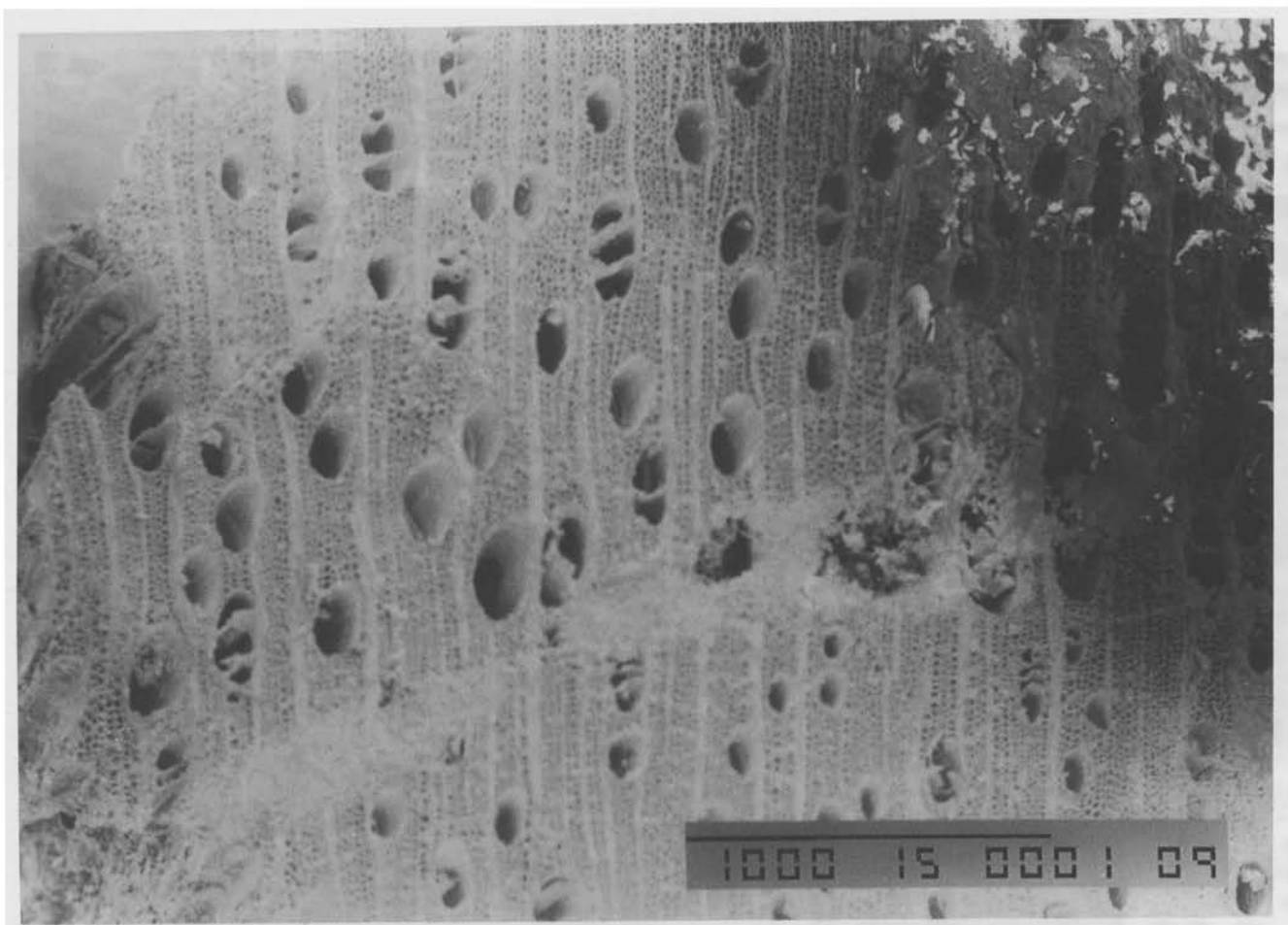




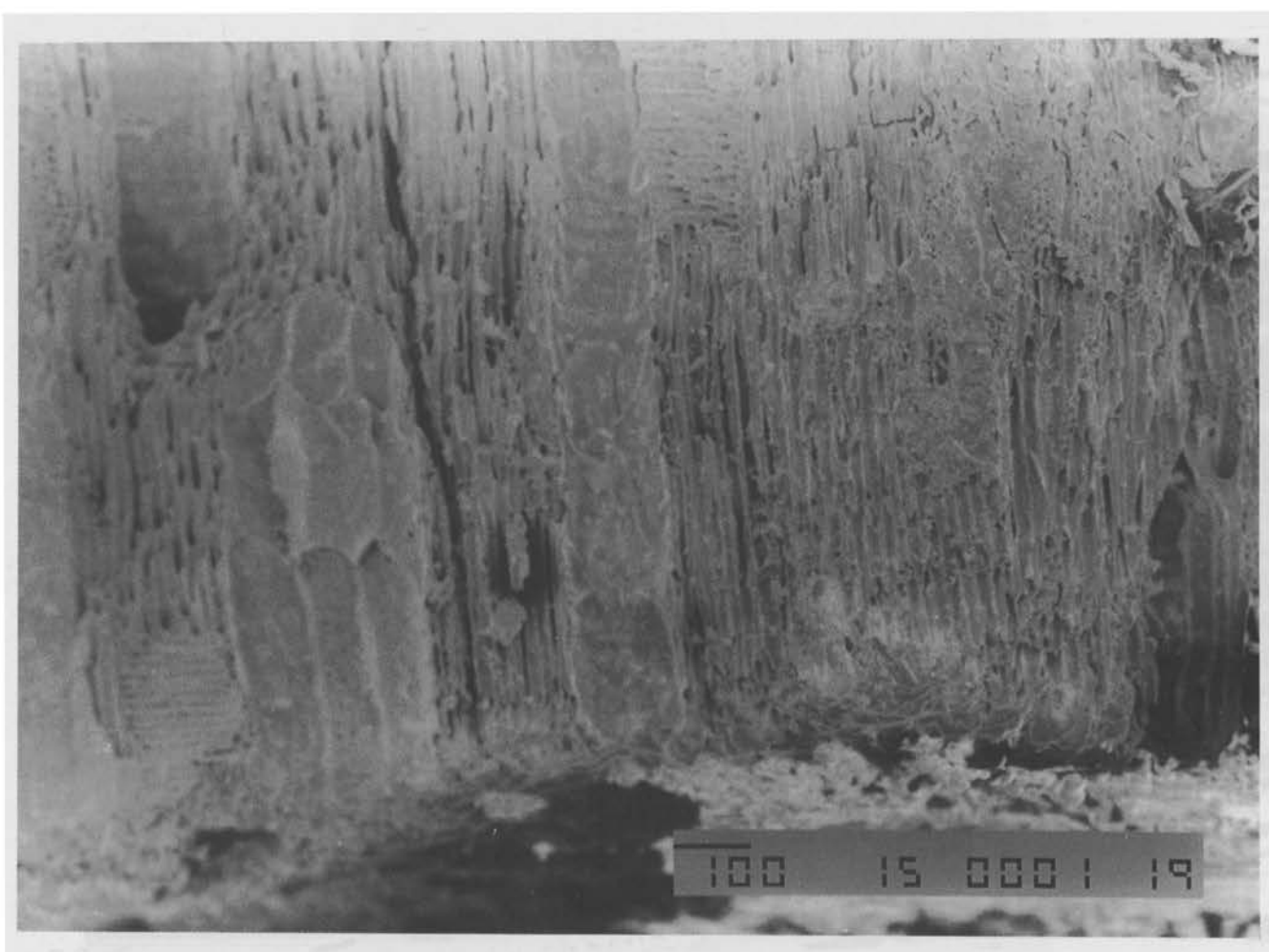
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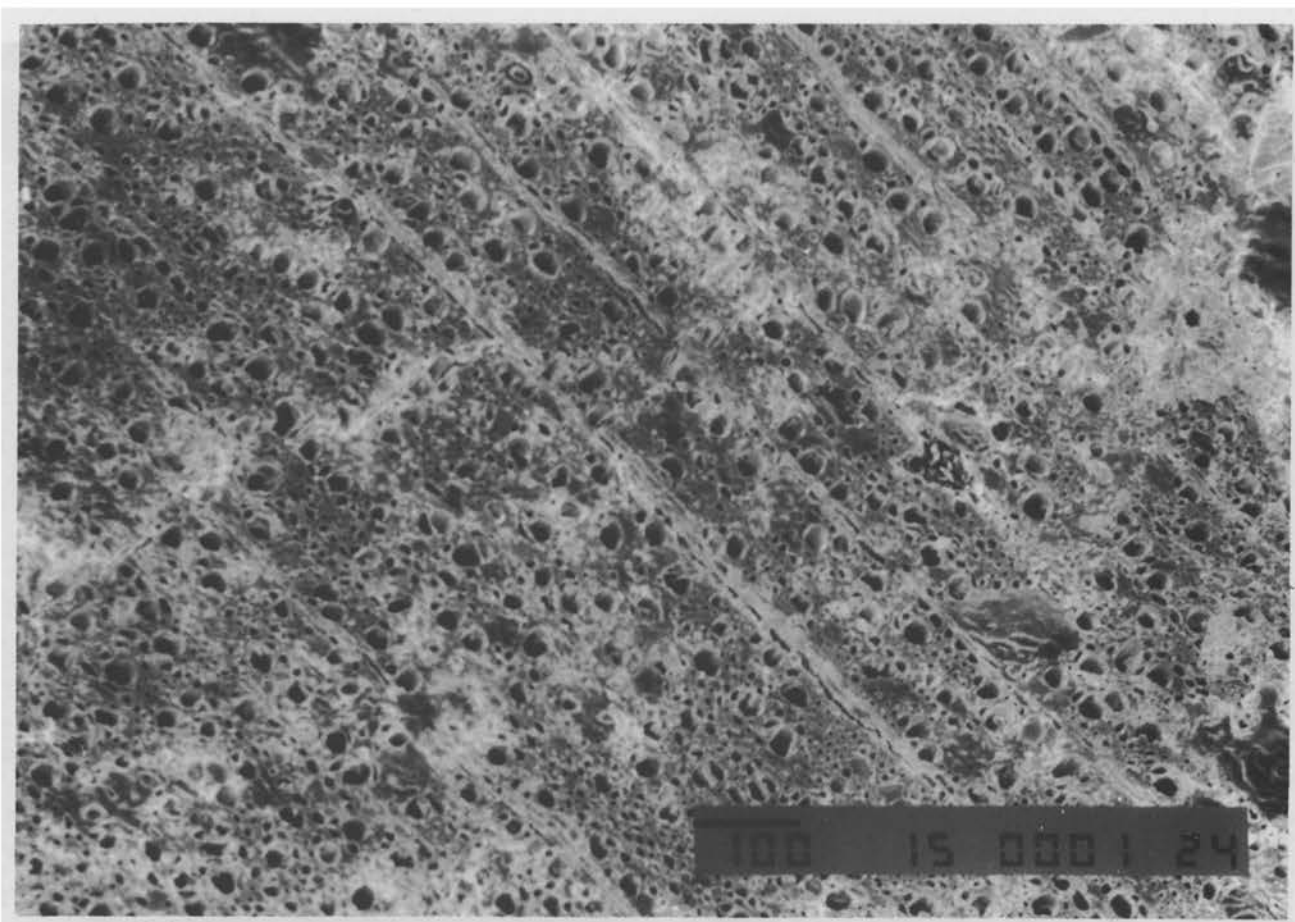
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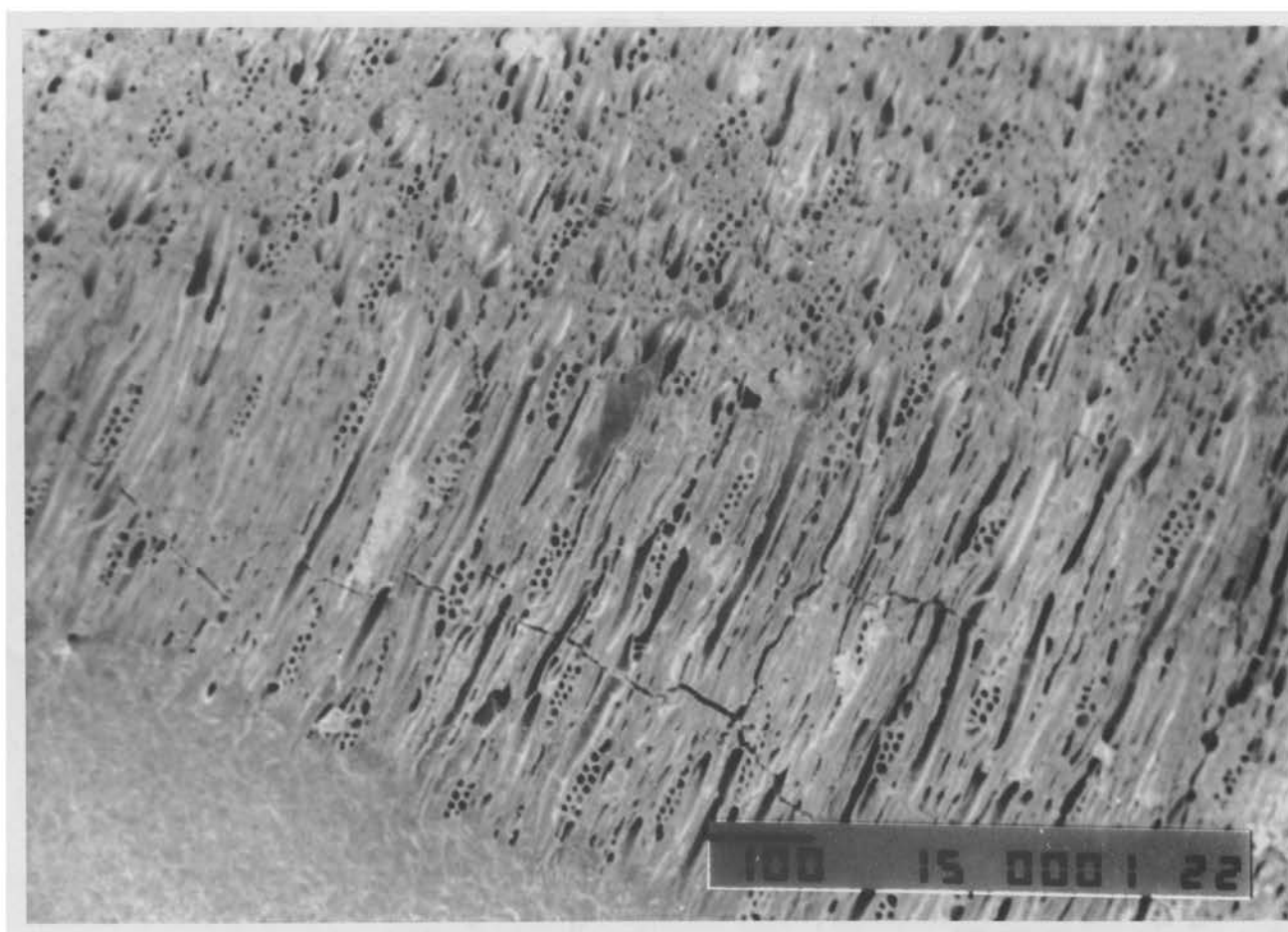
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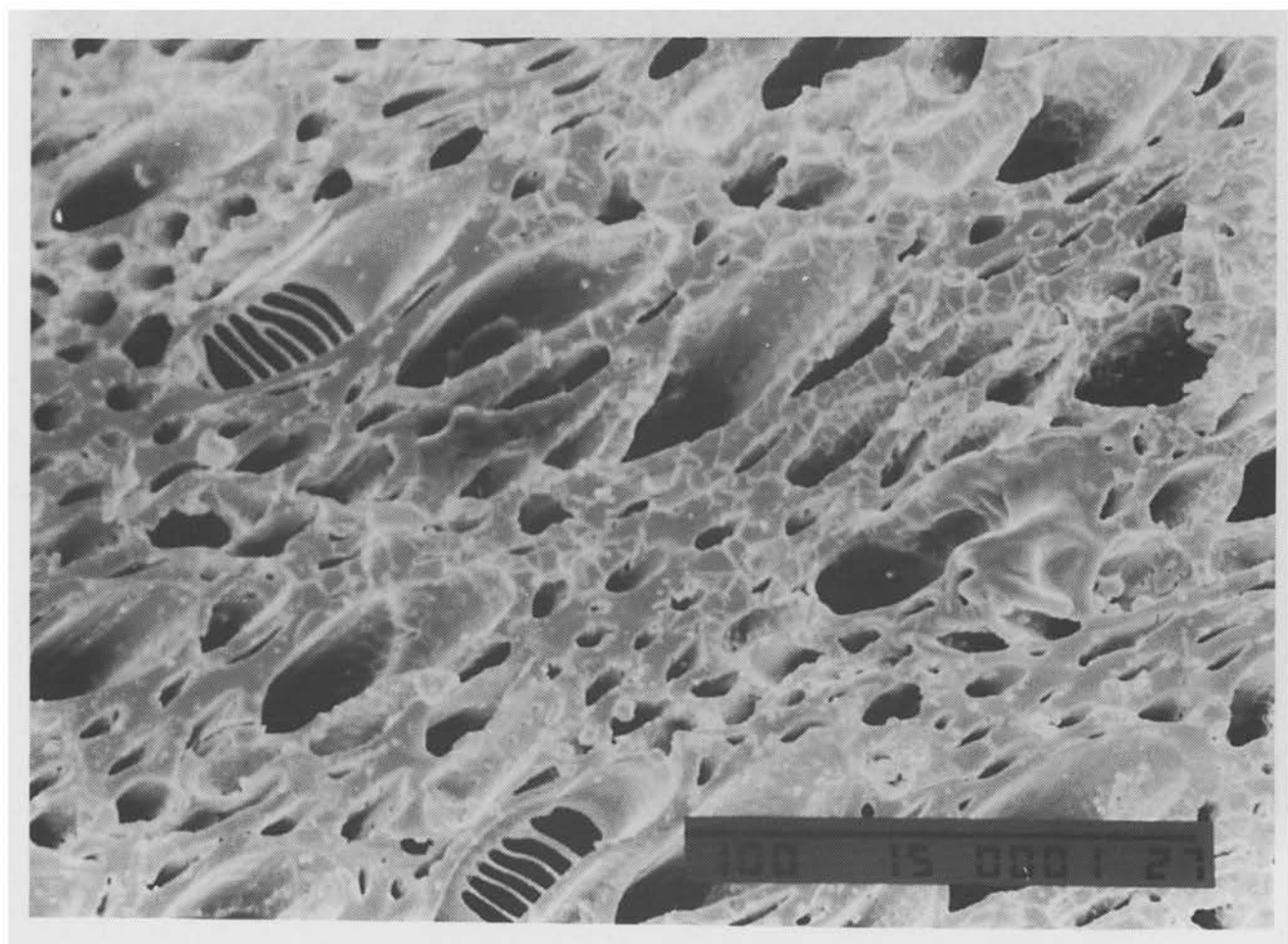
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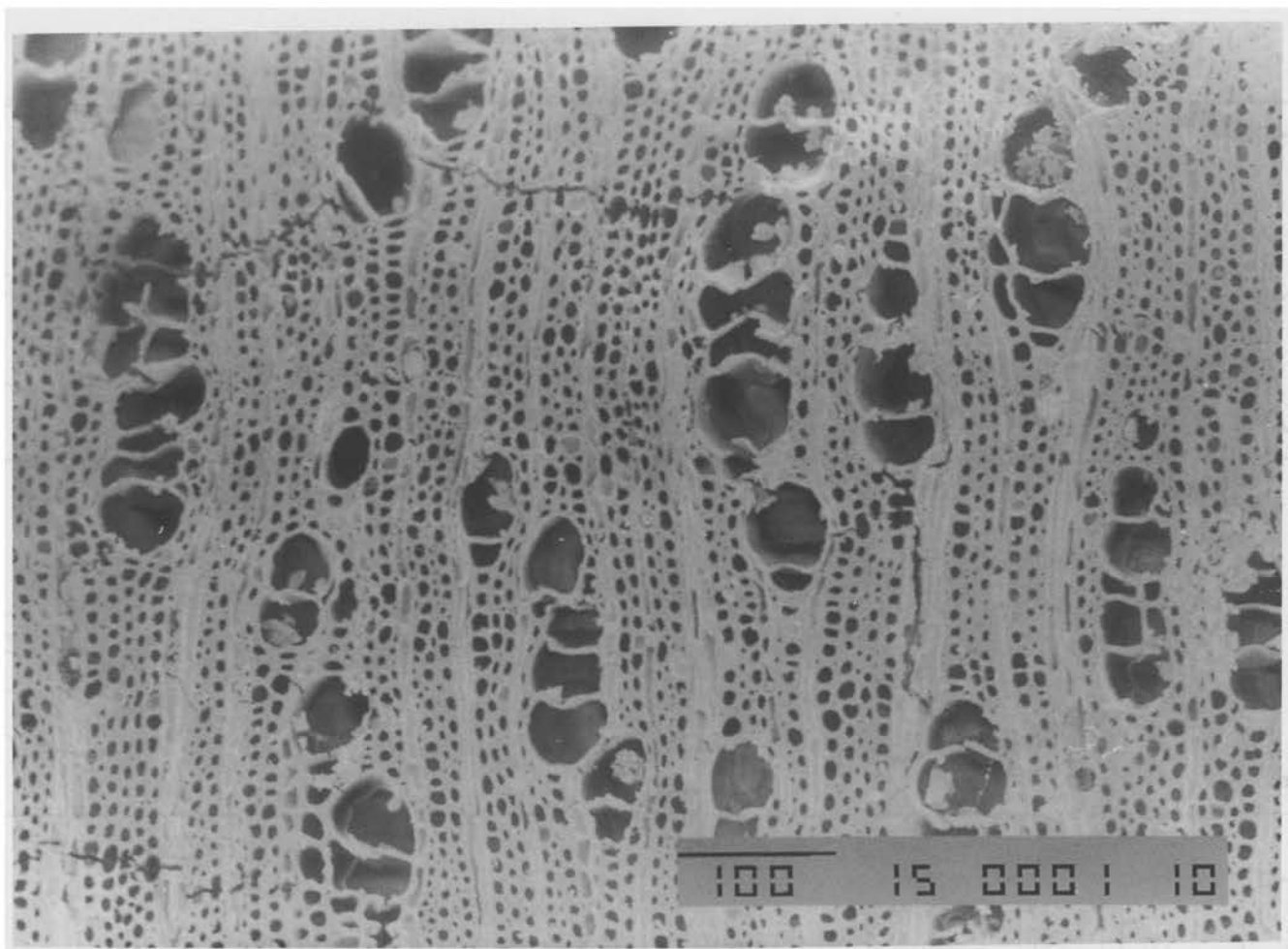


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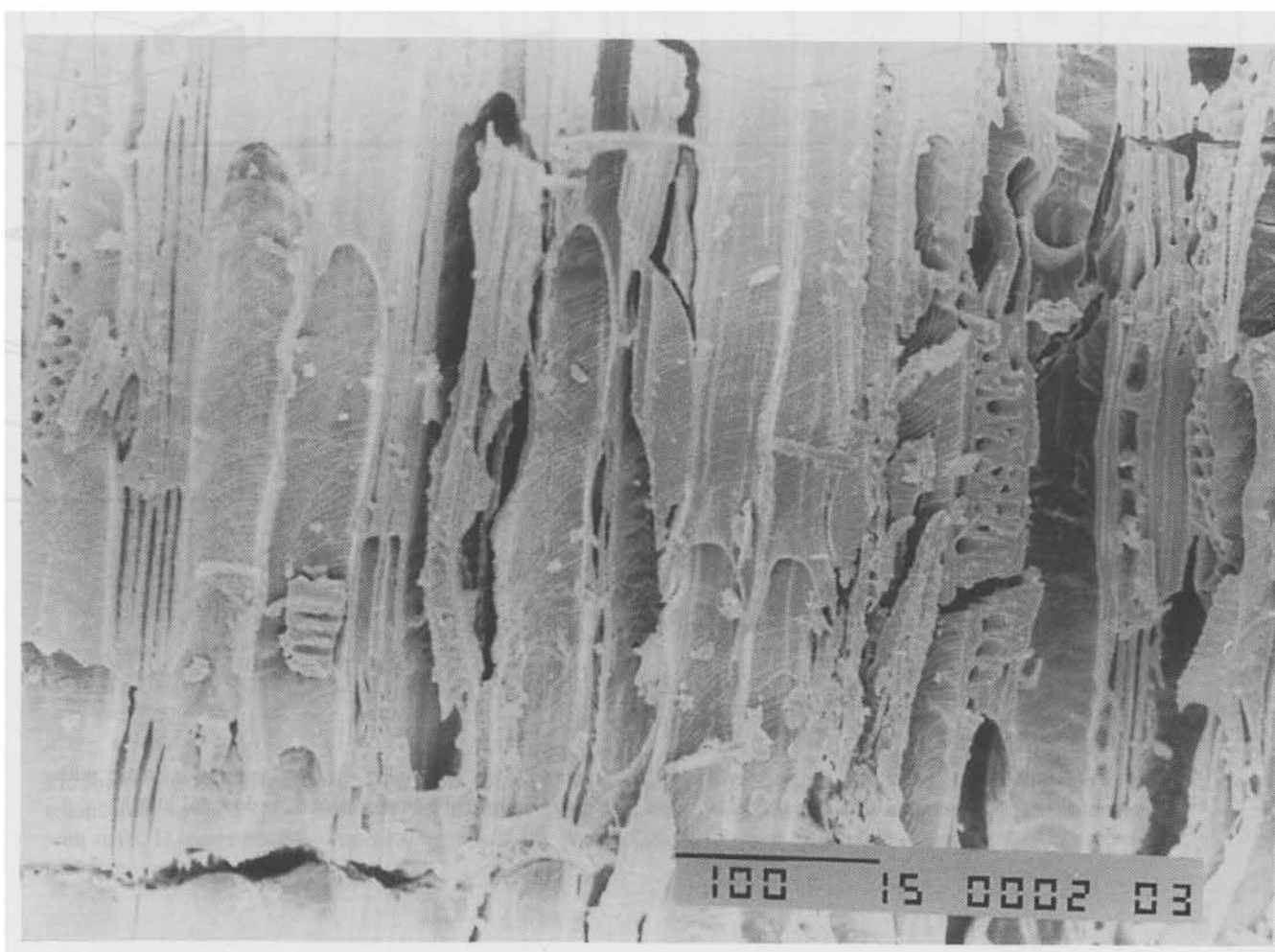


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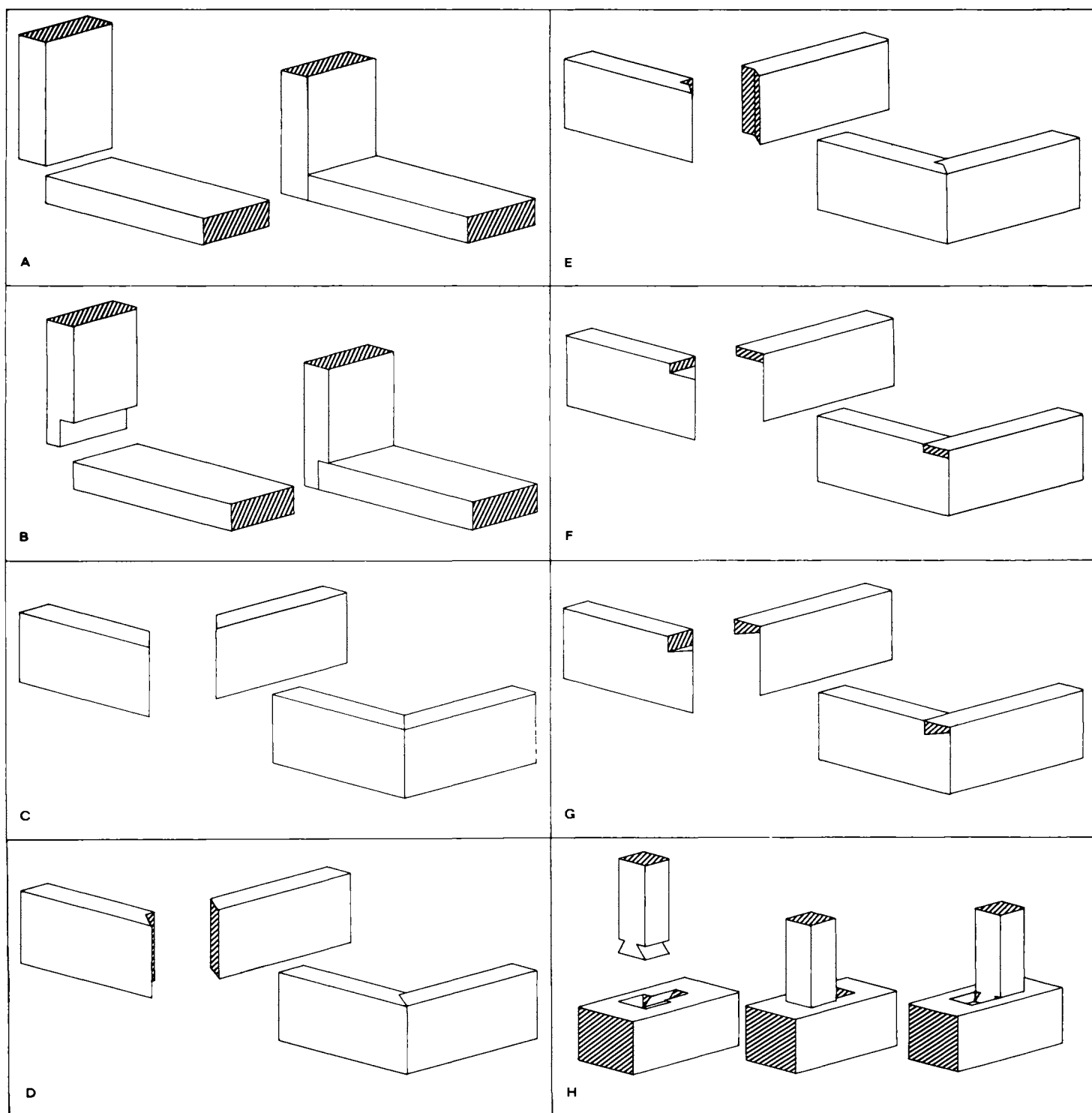




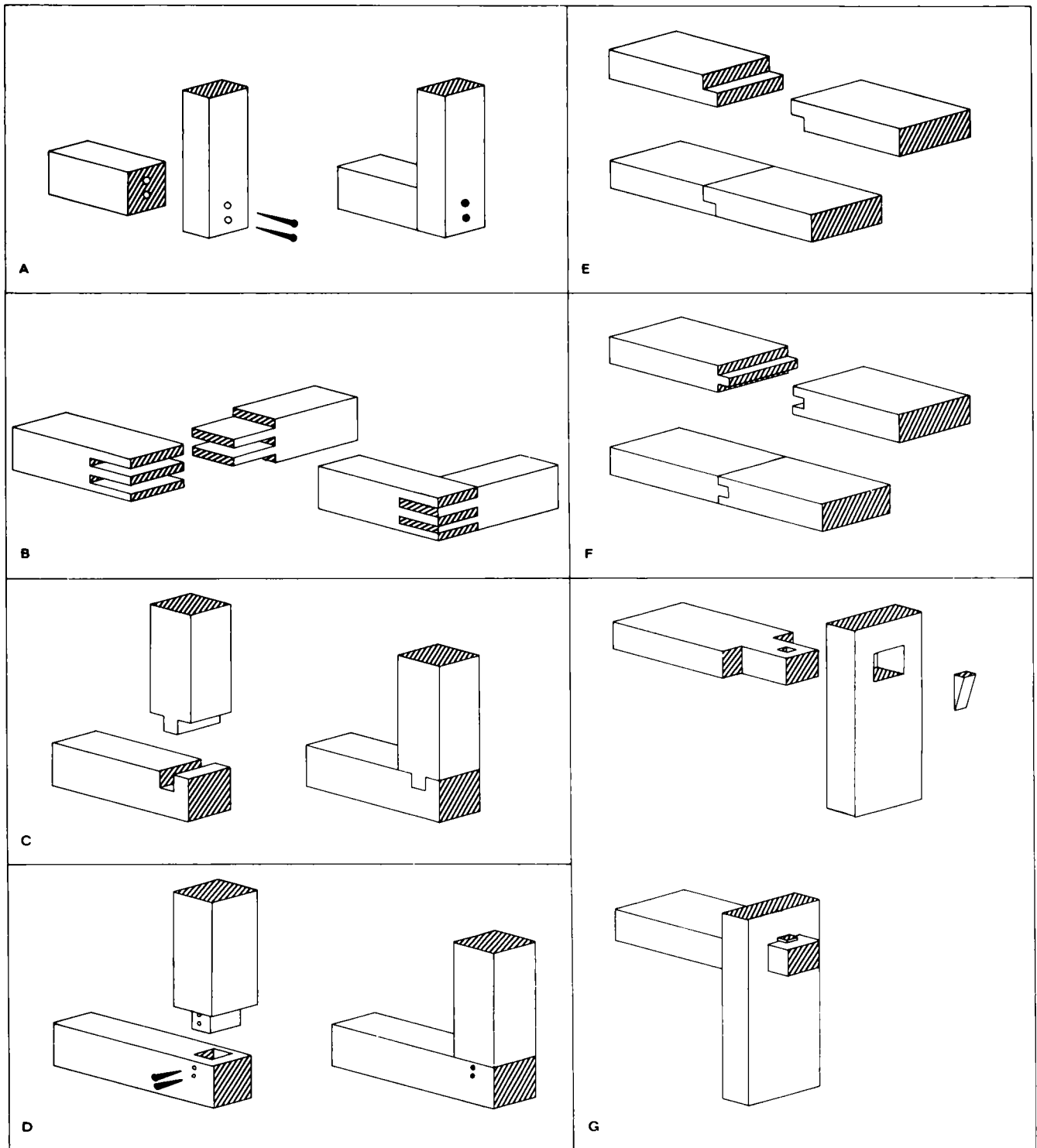
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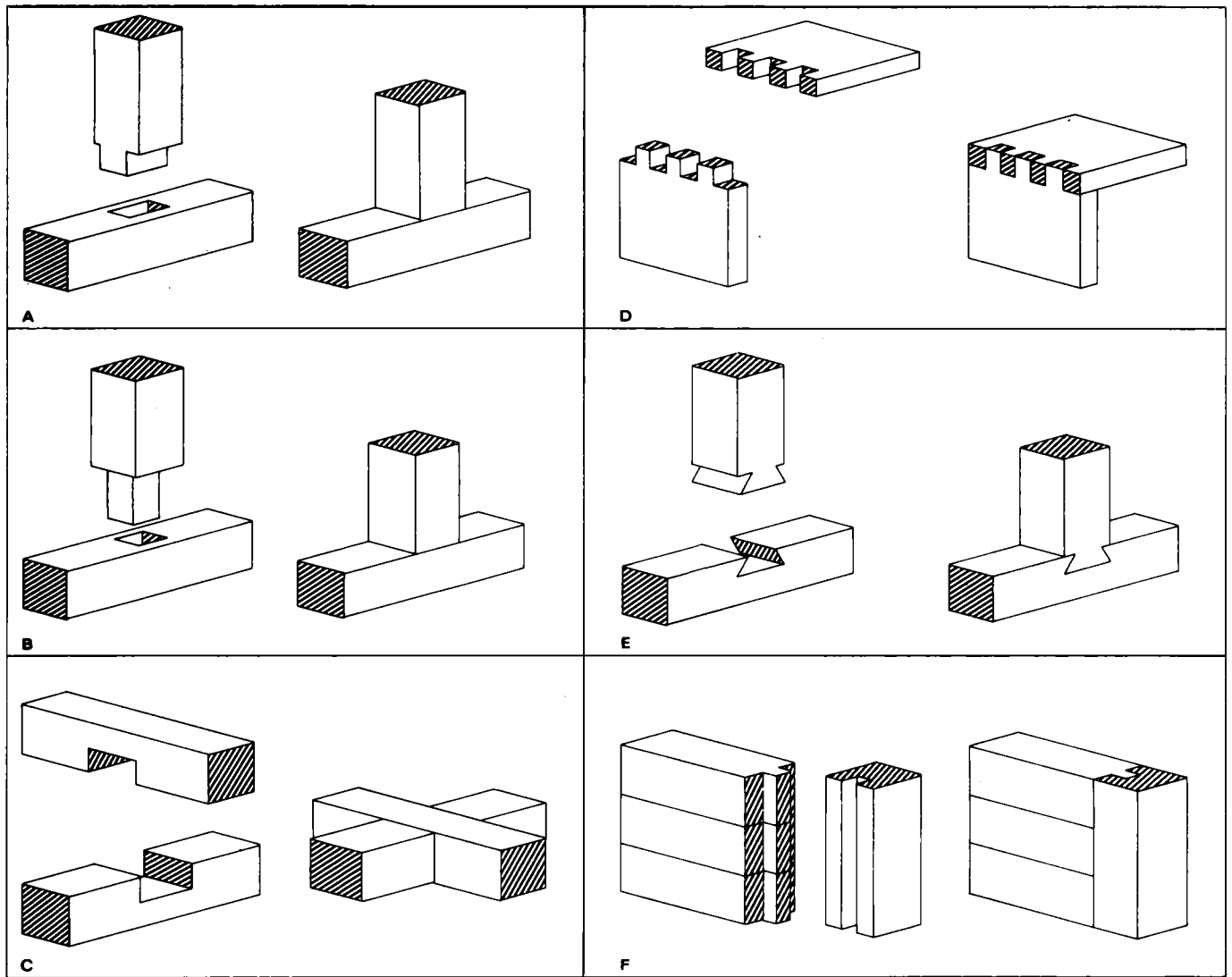
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20. Joints found in Egypt (after Petrie/Mackay 1915, pl. 24-25). A. butt joint; B. half joint; C. simple mitre; D. shoulder mitre; E. double shoulder mitre; F. mitre housing; G. dovetail housing mitre; H. dovetail joint.



21. Joints found in Greece (after Wasowicz 1966): A. simple angle joint, strengthened with nails; B. angle joint with tenons and slots; C. angle joint with tenon and groove (very weak); D. blind mortise-and-tenon joint, strengthened with nails; E. lapped scarf joint; F. tongue and groove scarf joint; G. open mortise-and-tenon joint with projecting tenon and wedge.



22. Joints from furniture in Herculaneum: A. blind mortise-and-tenon joint; B. open mortise-and-tenon joint; C. half-lap joint; D. comb joint; E. dovetail joint; F. tongue and groove joint, bracing the crosscut ends of glued boards.



23



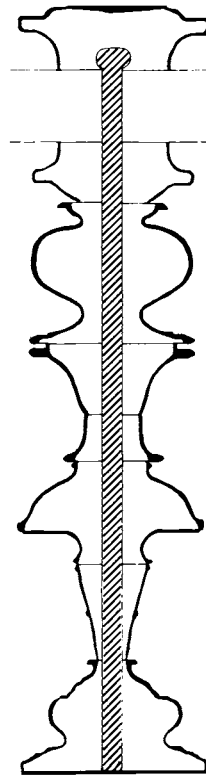
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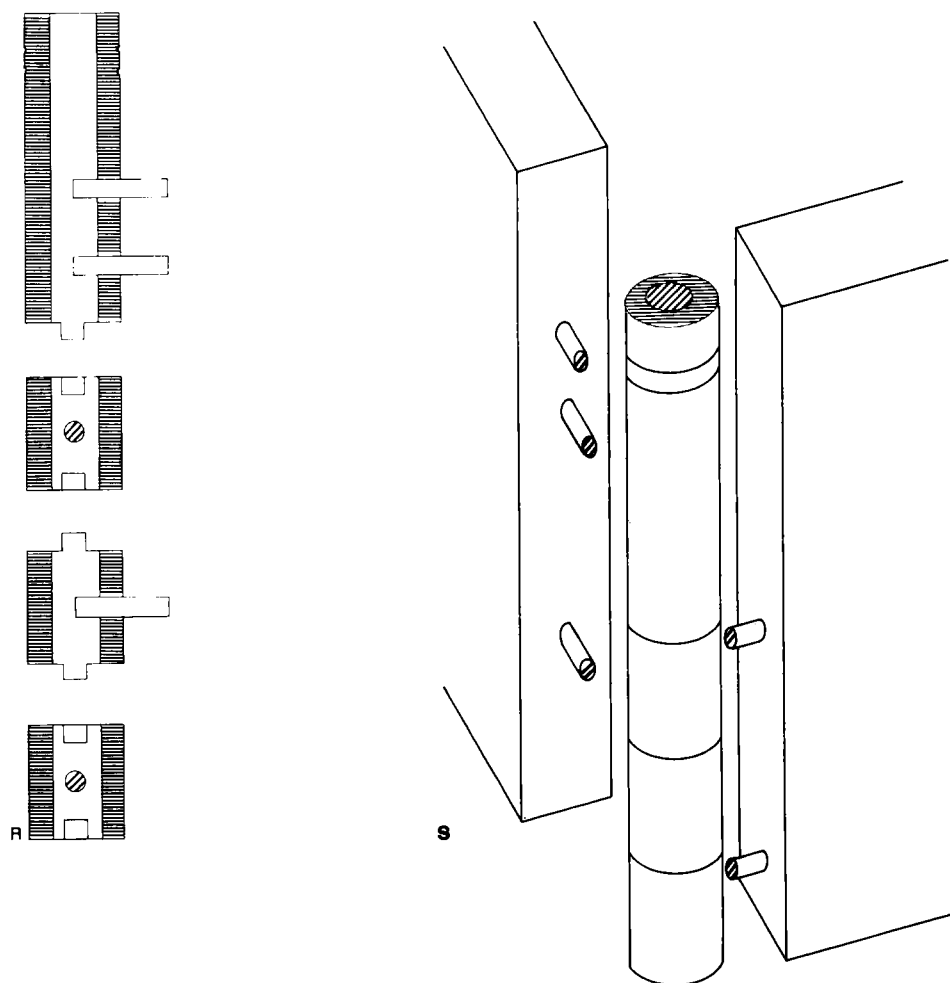
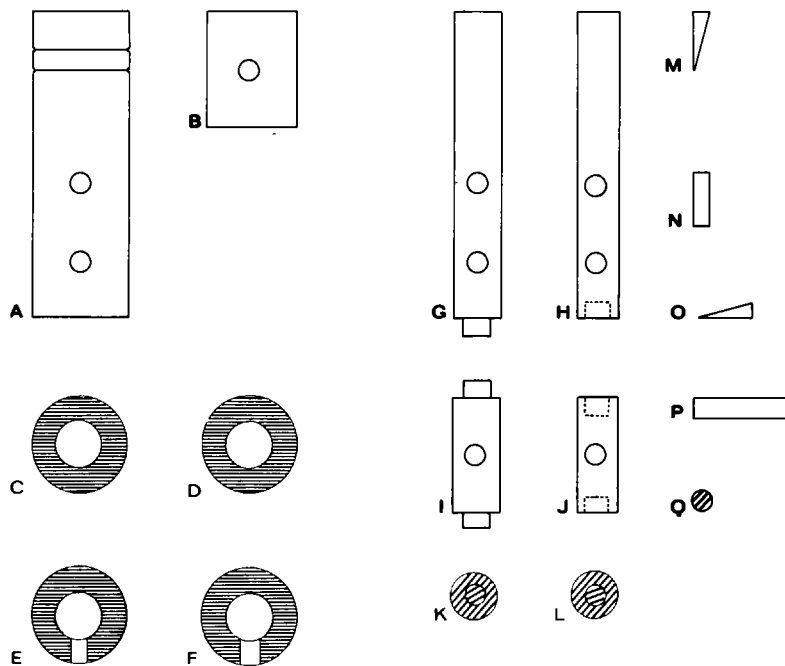


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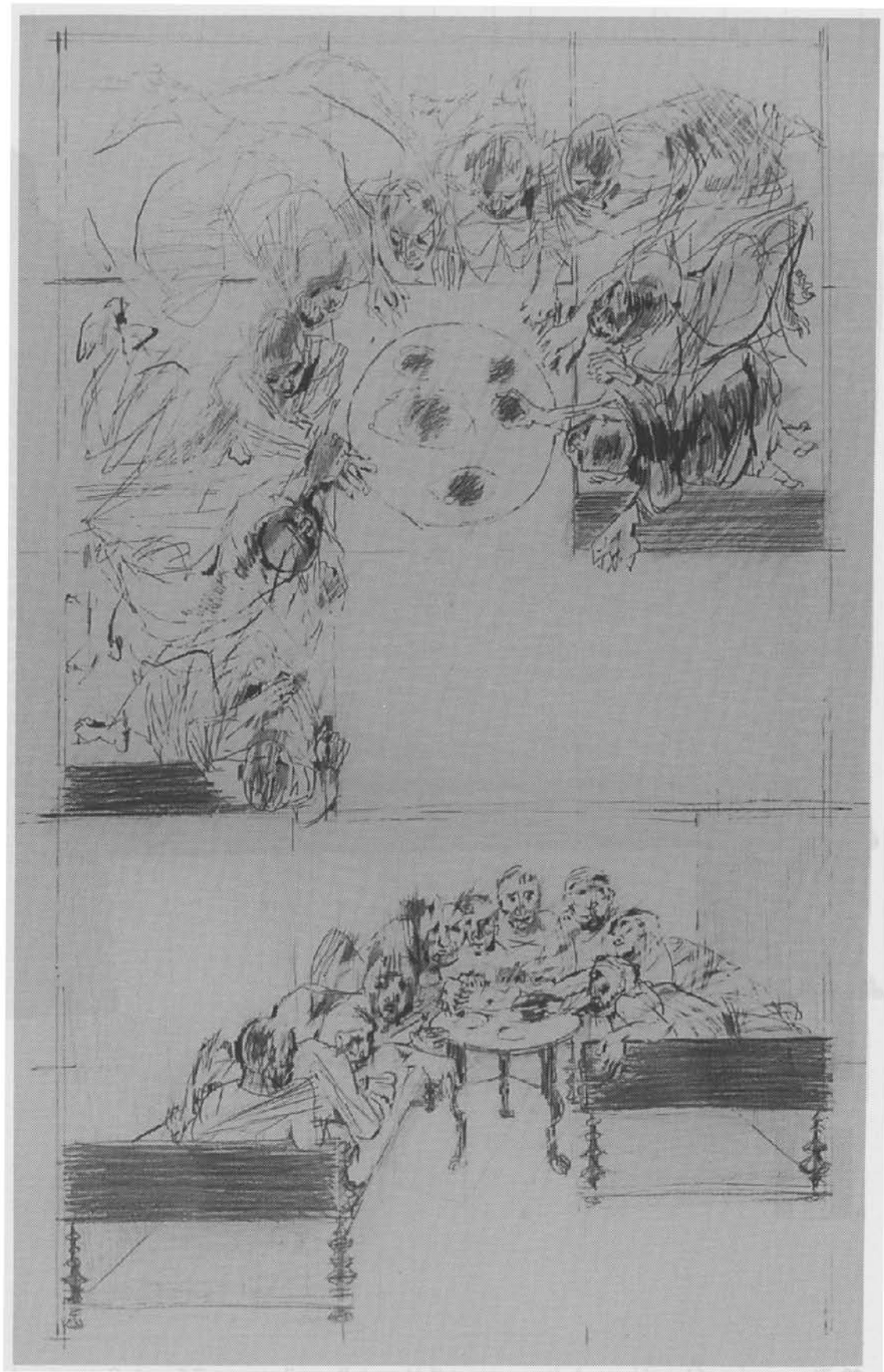


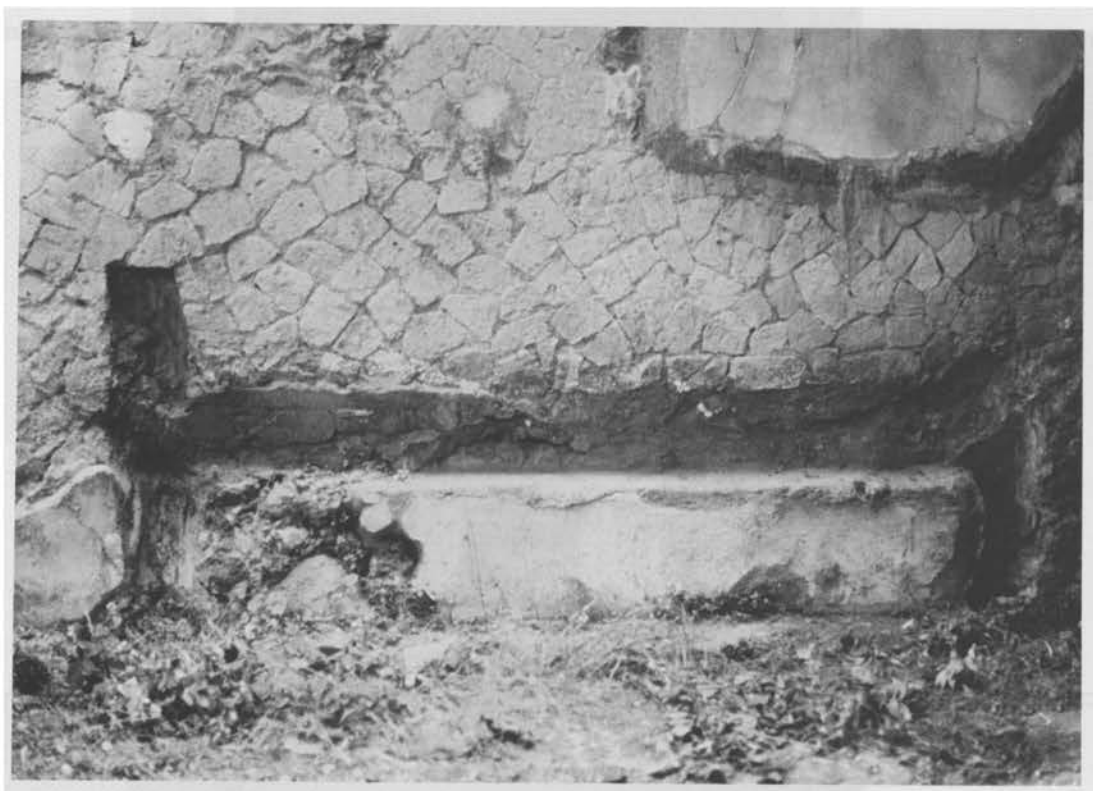
27. Wooden bed leg with bronze casing, cross-section; central iron rod shaded.



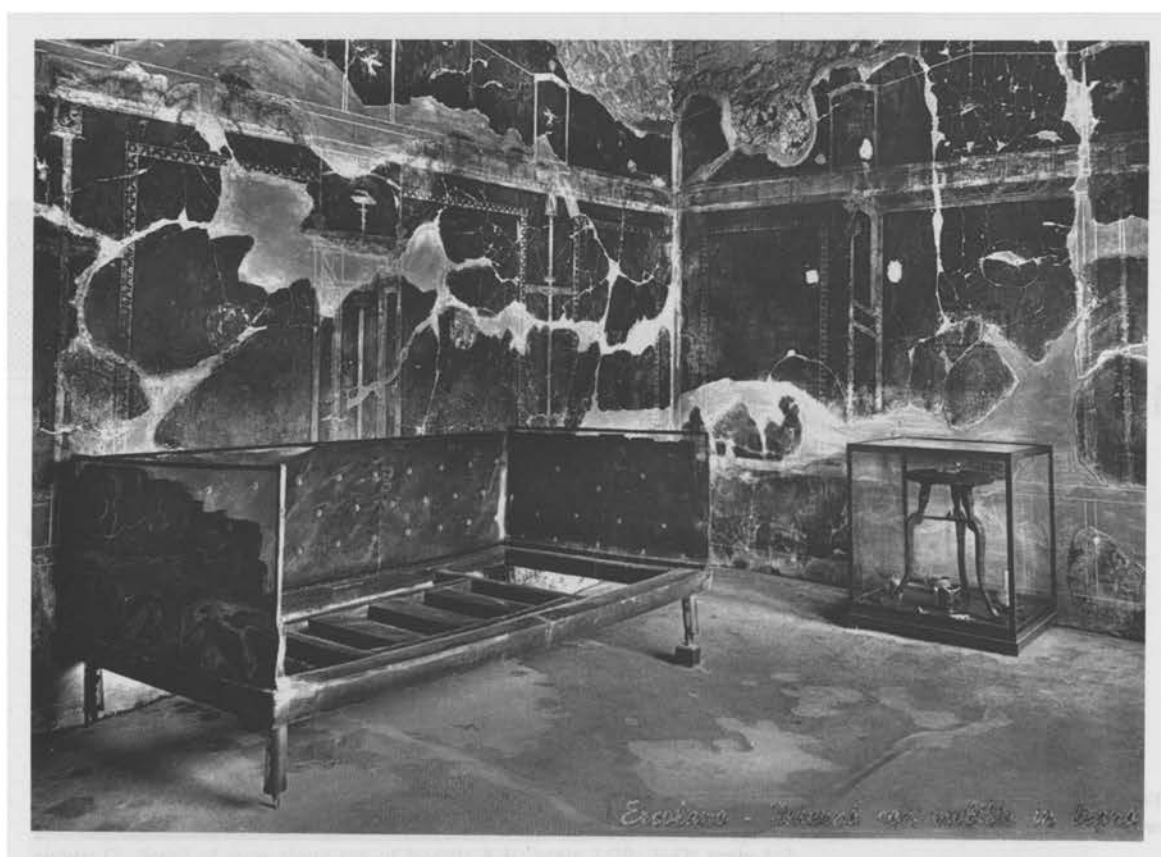


29. The operation of bone hinges: A. large segment (5-11 cm.); B. small segment (3-5 cm.); C. top view A; D. top view B; E. cross-section A at hole level; F. cross-section B at hole level; G. hardwood core of segment A (male); H. hardwood core of segment A (female); I. hardwood core of segment B (male); J. hardwood core of segment B (female); K. top view of G and I; L. top-view of H and J; M. softwood wedge to secure hardwood core in bone segments; N. top view wedge M; O. side view wedge M; P. pin to attach segment to furniture; Q. top view pin P; R. cross-section of four segments (segment A above three segment B's) with components G-Q in place; S. the four segments of R linked in band: horizontal shading = cross-section bone; diagonal shading = cross-section wood; A-F: bone, G-Q: wood; R-S: combination of bone and wood. M-O are not indicated in R-S.





31



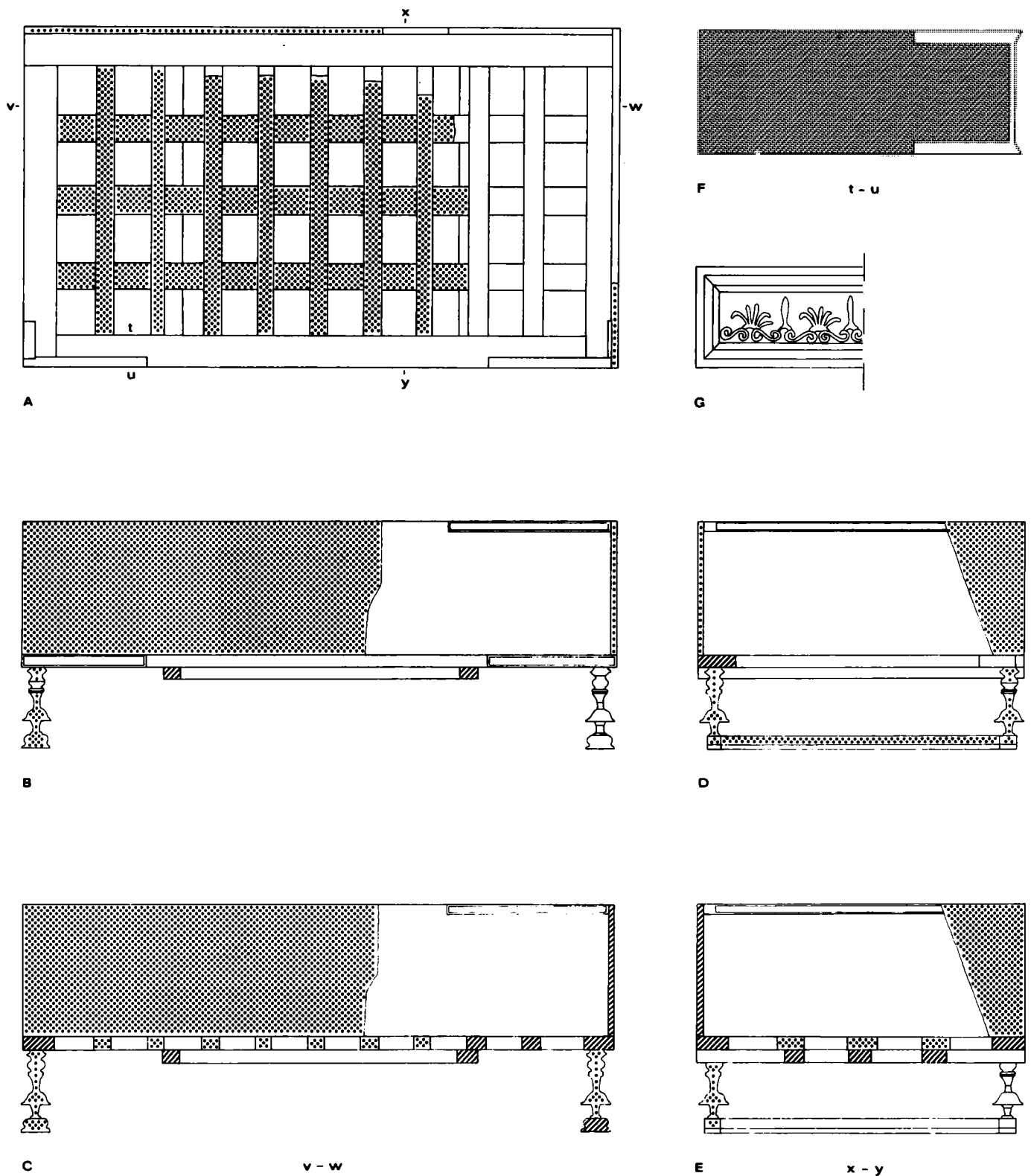
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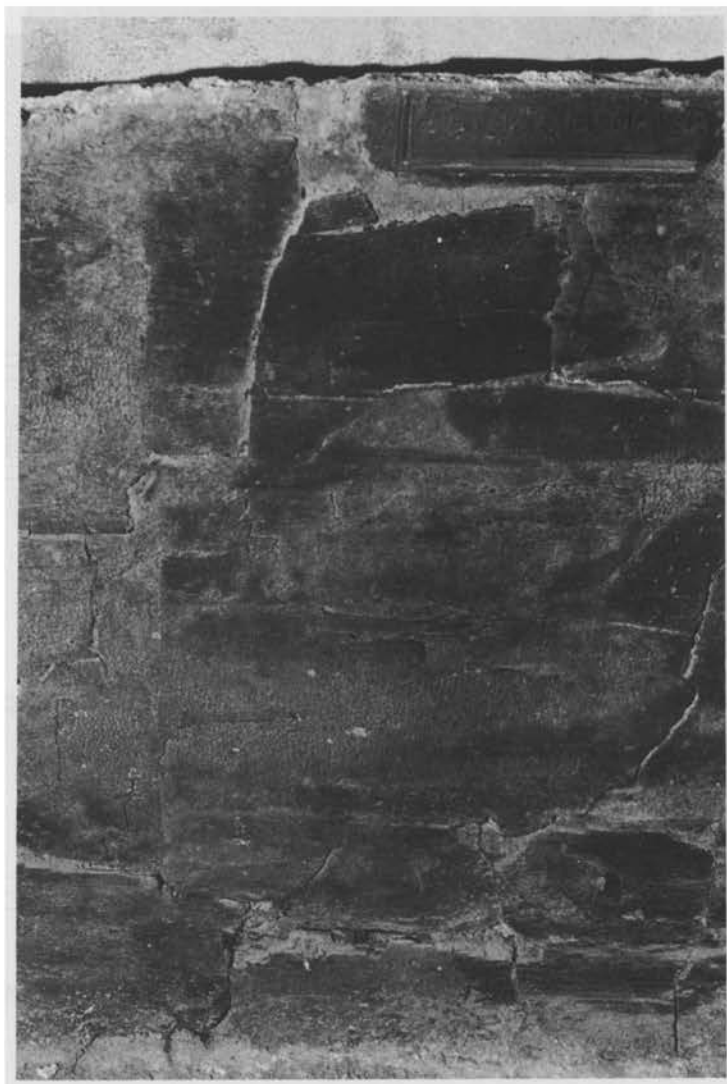


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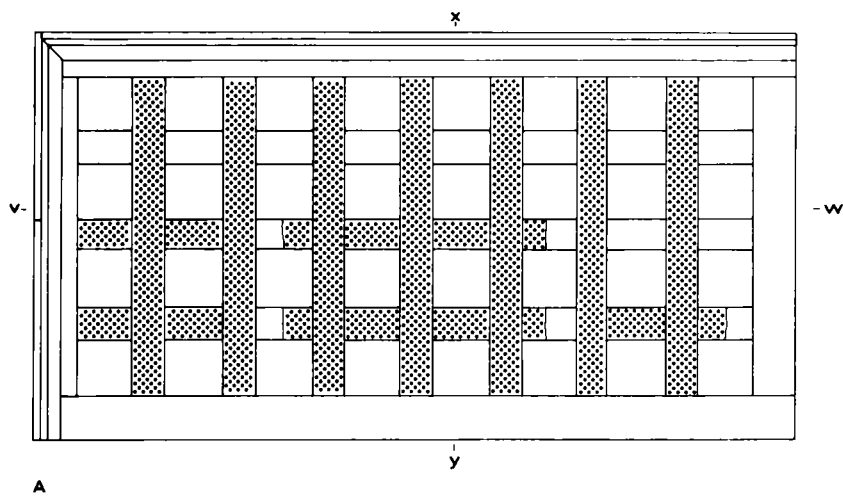
35. Bed from the Casa del Tramezzo di Legno, Herculaneum (cat.no. 1): A. top view; B. front view; C. cross-section v-w (towards back); D. side view (left); E. cross-section x-y (towards right); F. cross-section t-u (towards right); G. detail of strip along top of board; A-E: scale 1:20; F-G: scale 1:2.



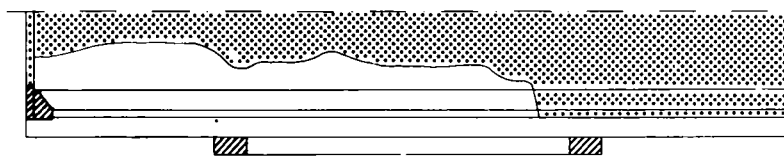
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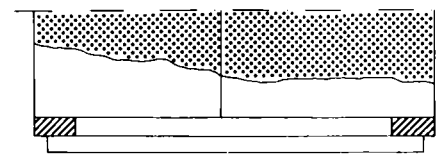
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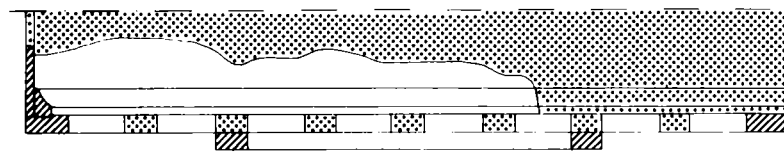
A



B

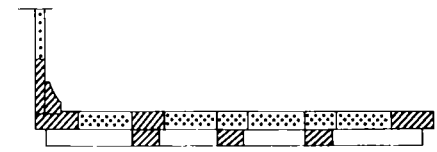


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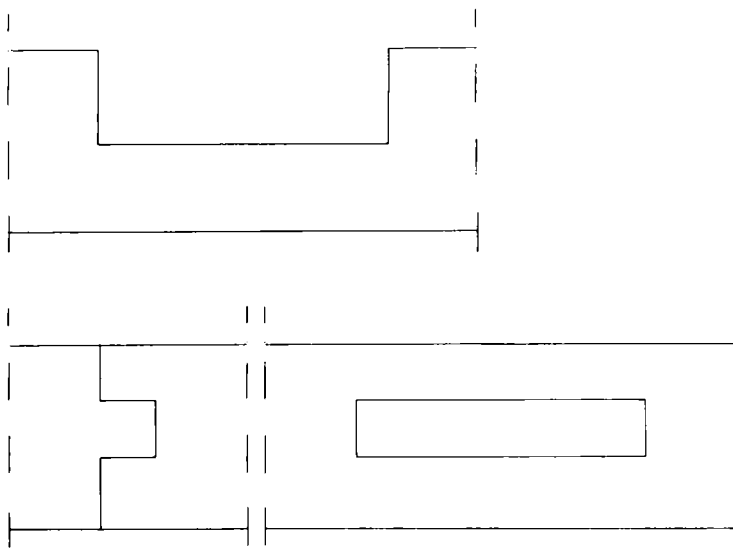
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v - w

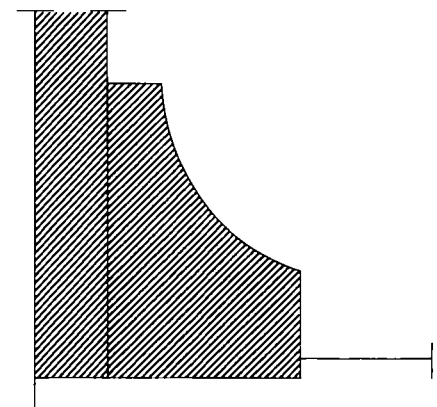


E

x - y



F



G

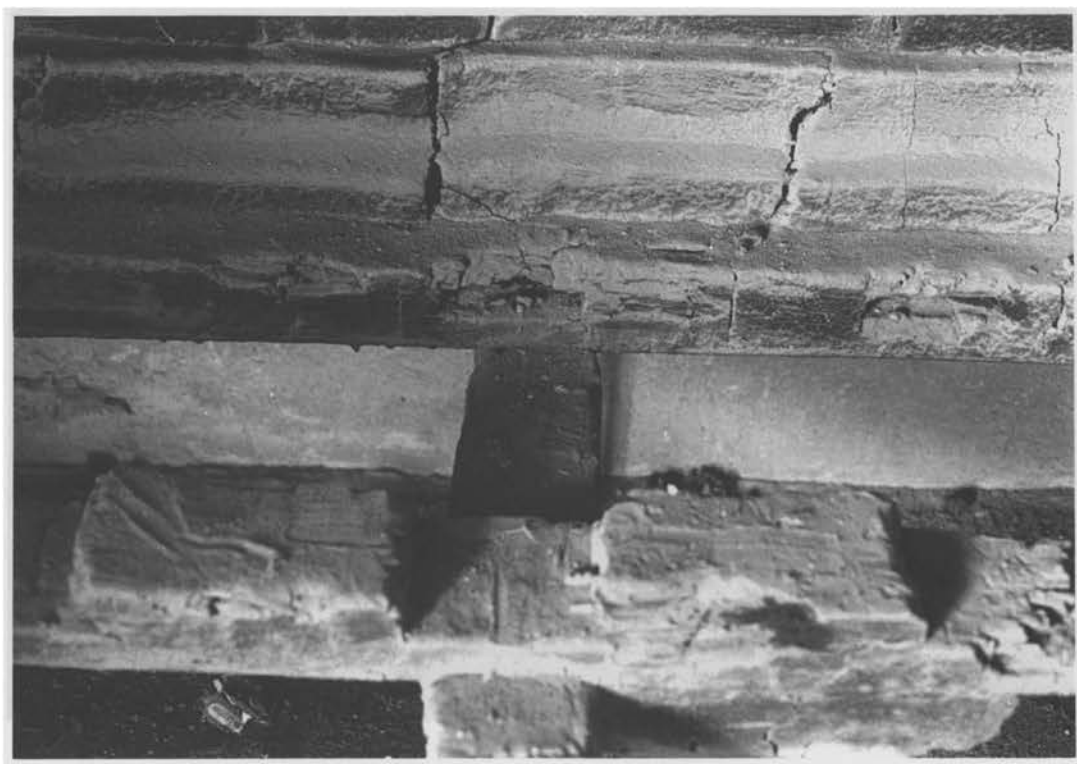
38. Bed from the Casa a Graticcio, Herculaneum (cat.no. 2): A. top view; B. front view; C. cross-section v-w (towards back); D. side view (left); E. cross-section x-y (towards right); F. details joints Grid A: (above) half-lap joint at intersections, (below) mortise-and-tenon joint at bedframe, cross-section (left) and head on (right); G. detail moulding (cf. E); A-E: scale 1:20; F-G: scale 1:2; the broken lines in B-E indicate that the original boards were higher.



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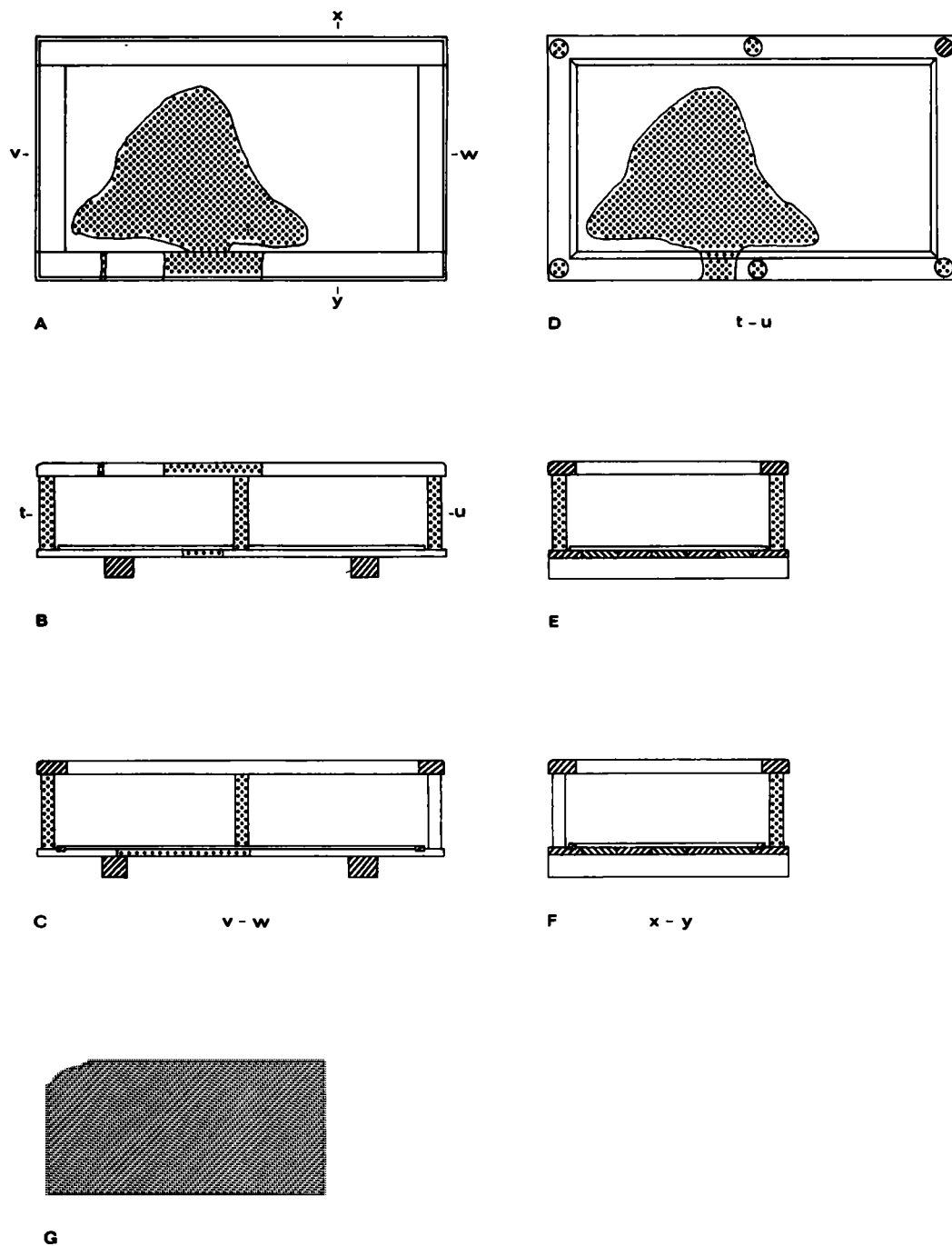
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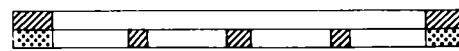
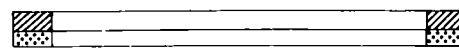
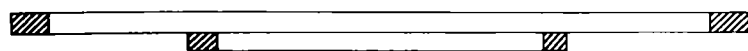
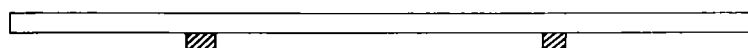
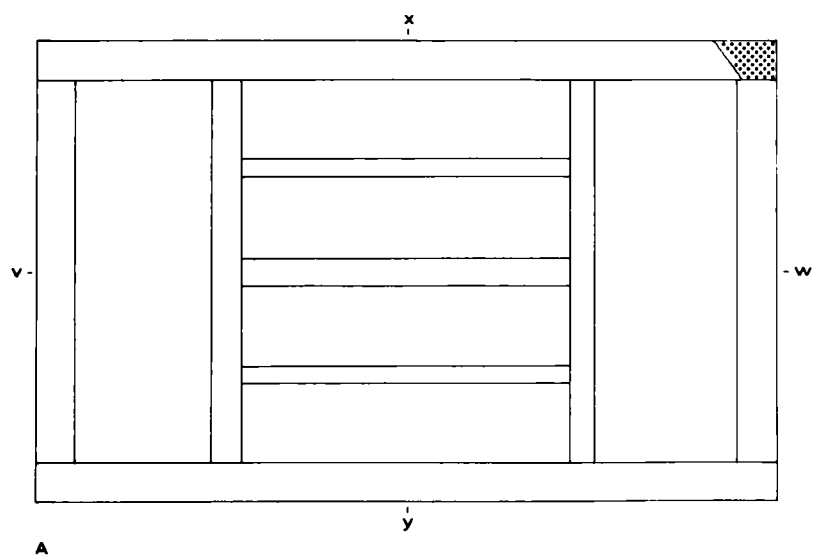
43



44



45. Child's bed from the Casa a Graticcio, Herculaneum (cat.no. 3): A. top view; B. front view; C. cross-section v-w (towards back); D. cross-section t-u (downwards); E. side view (left); F. cross-section x-y (towards right); G. cross-section of upper frame (moulding); A-F: scale 1:20; G. scale 1:2.



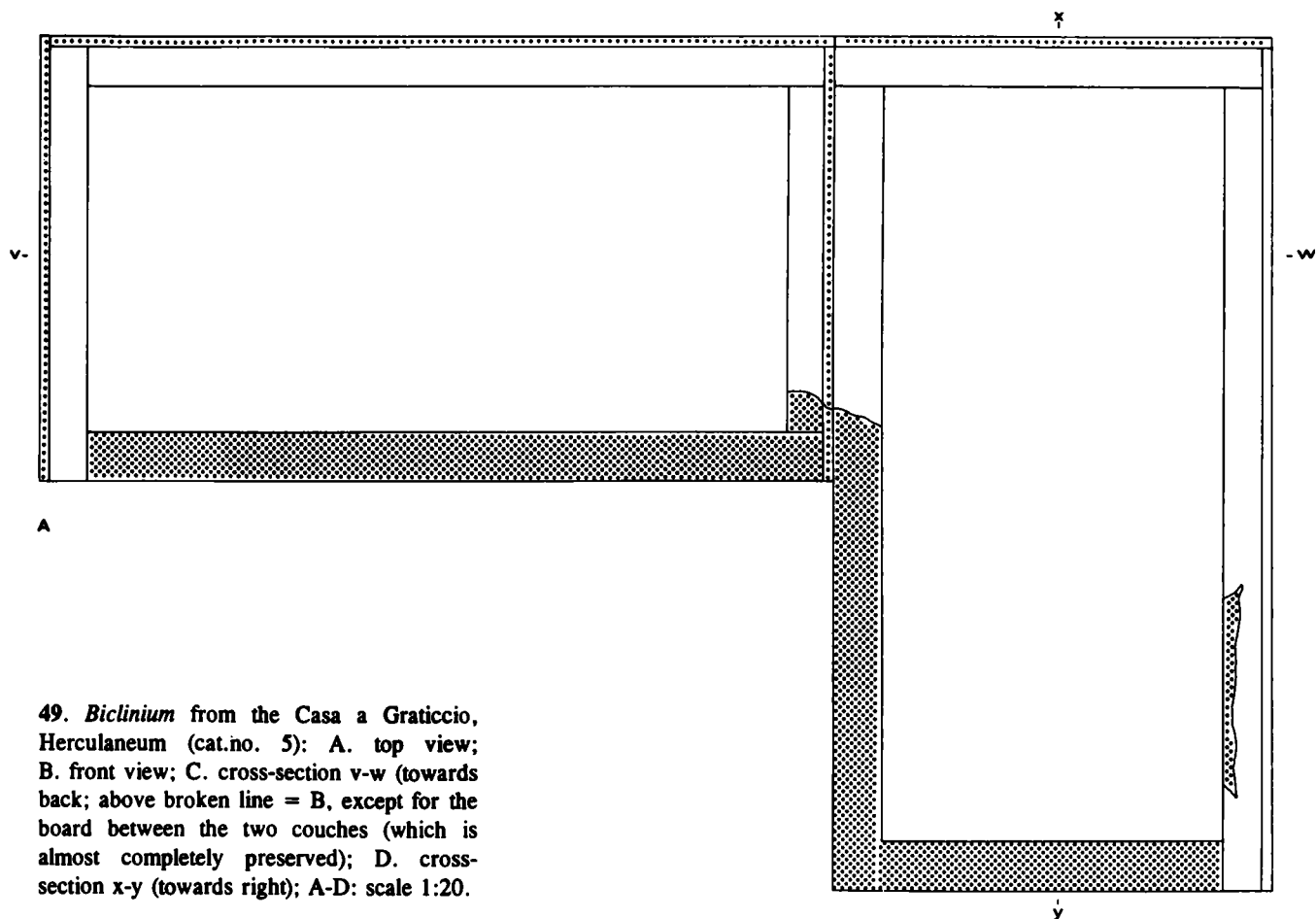
46. Bed from the Casa a Graticcio, Herculaneum (cat.no. 4): A. top view; B. front view; C. cross-section v-w; D. side-view (left); E. cross-section x-y; A-E: scale 1:20.



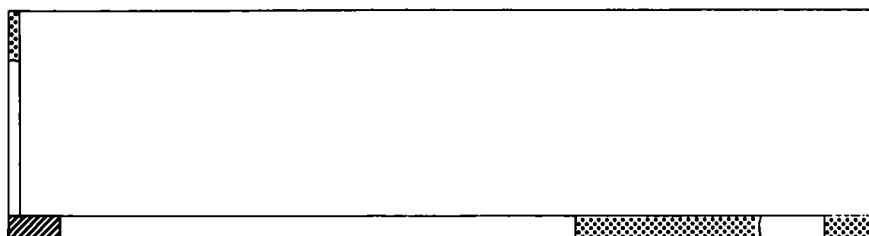
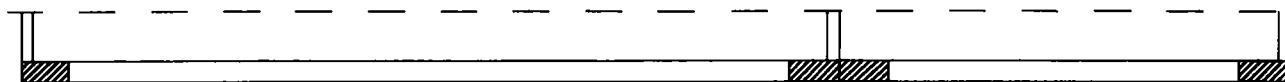
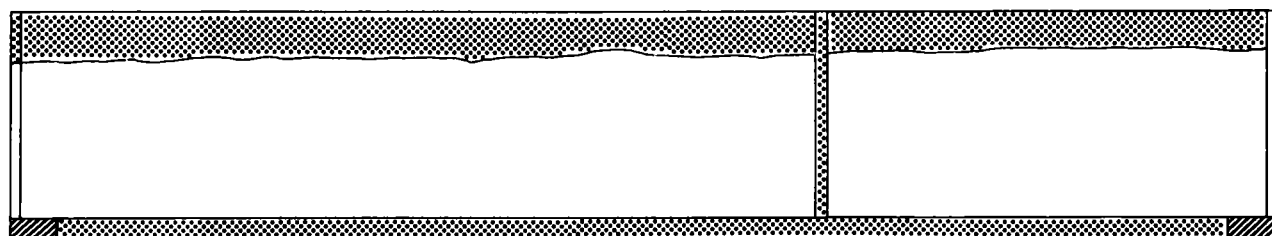
47



48



49. *Biclinium* from the Casa a Graticcio, Herculaneum (cat.no. 5): A. top view; B. front view; C. cross-section v-w (towards back; above broken line = B, except for the board between the two couches (which is almost completely preserved); D. cross-section x-y (towards right); A-D: scale 1:20.





50



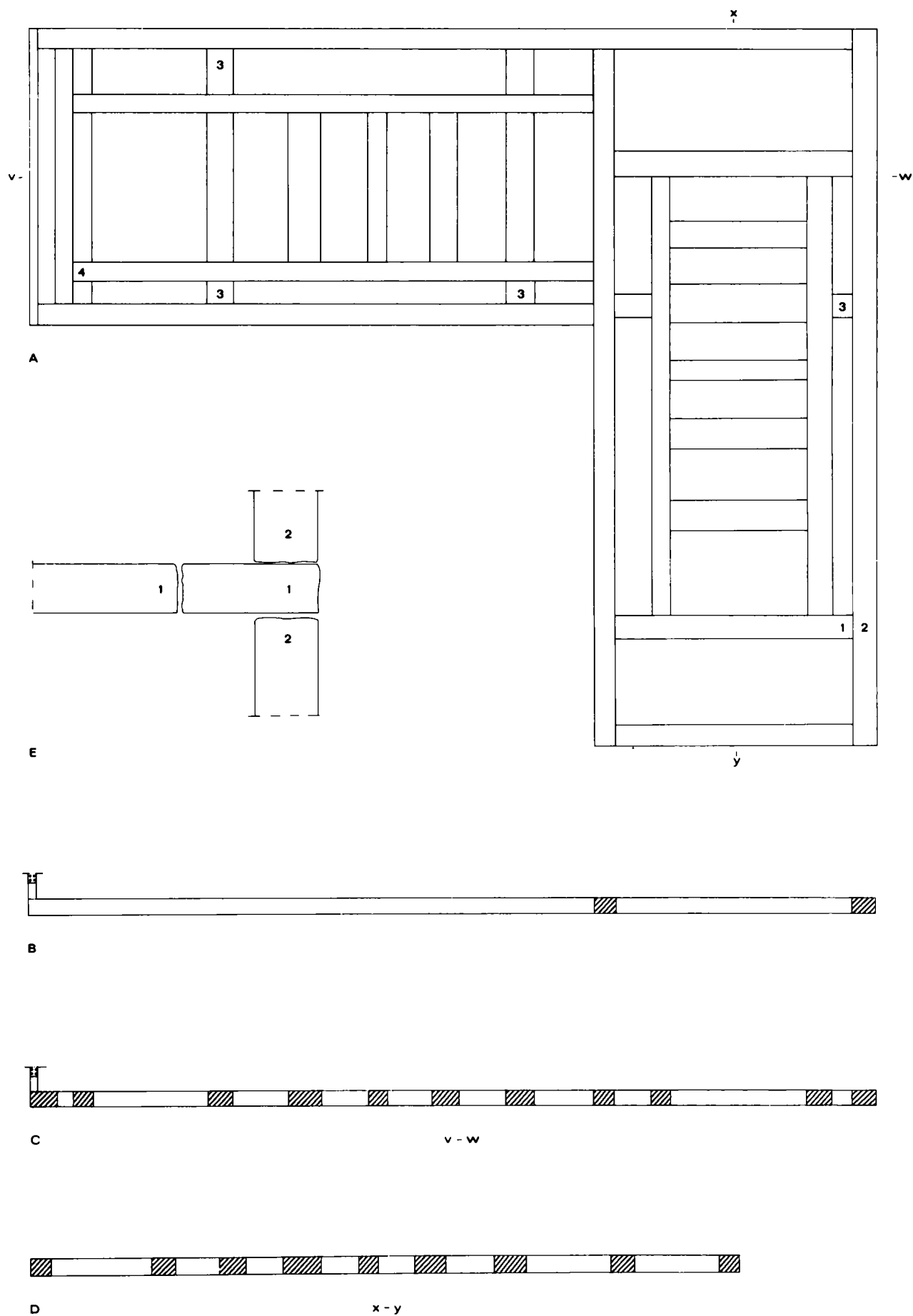
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52



53



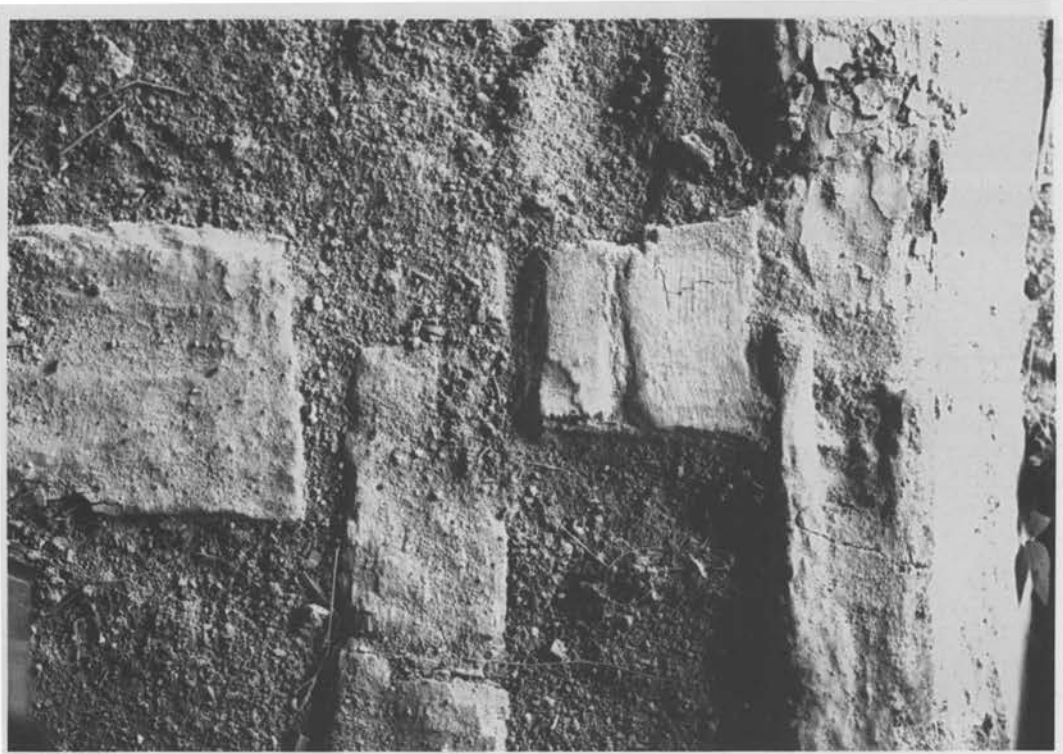
54. *Biclinium* from the Casa dell'Alcova, Herculaneum (cat.no. 6): A. top view (reconstruction); B. front view; C. cross-section v-w (towards back); D. cross-section x-y; E. detail; cf. catalogue for E and numbers 1-4; in B-D the height measurements are reconstructed; A-D: scale 1:20; E: scale 1:10.



55



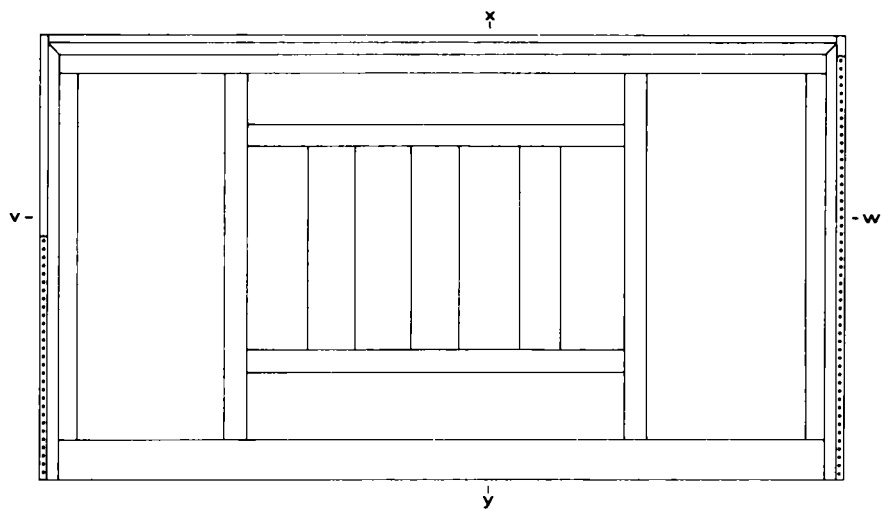
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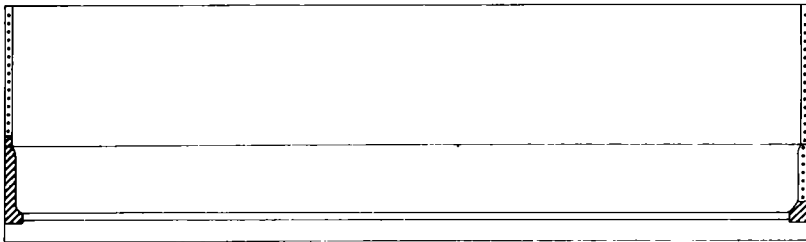
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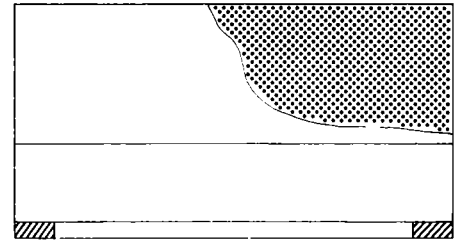
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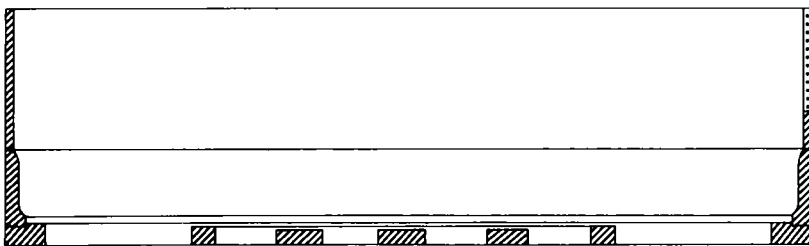
A



B

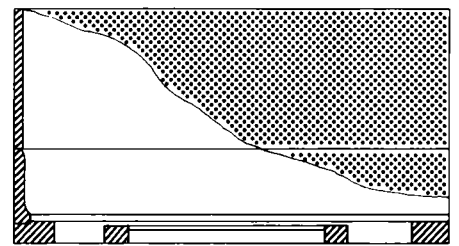


D



C

v - w



E

x - y

59. Couch from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 7): A. top view; B. front view; C. cross-section v-w (towards back); D. side view (left); E. cross-section x-y (towards right); scale 1:20.



60



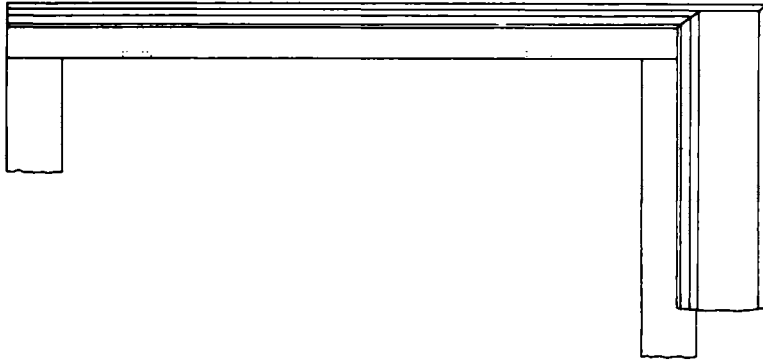
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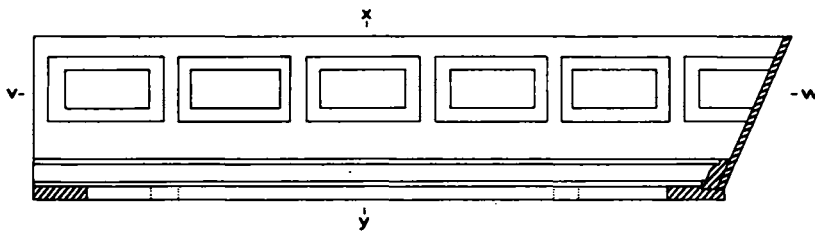
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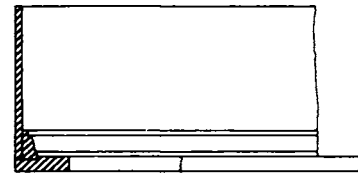
63



A



B

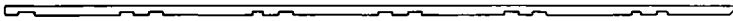


D



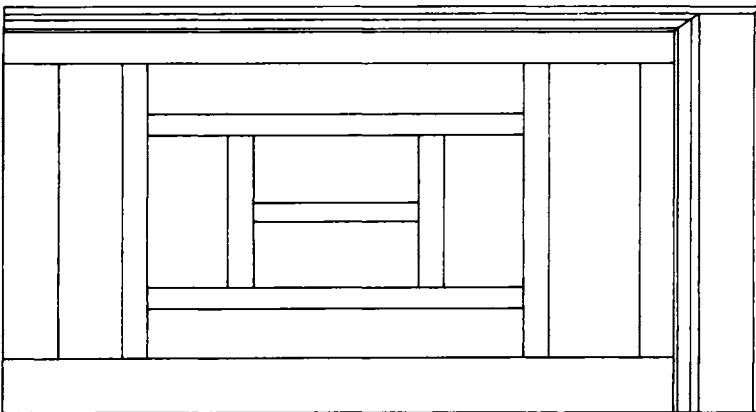
x - y

E



C

v - w



F

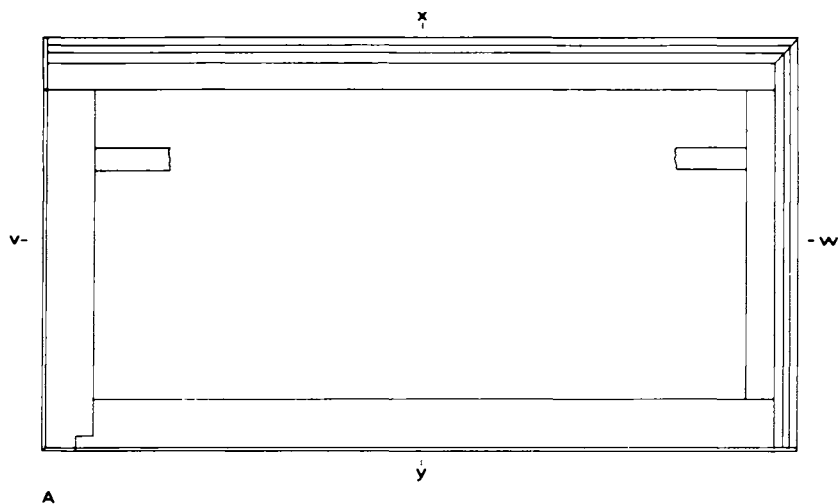
64. Bed from *Insula V 17*, Herculaneum (cat.no. 9): A. top view; B. front view; C. cross-section v-w of board (only the front of board is visible); D. side view (left); E. cross-section x-y of board (only the front of board is visible); F. reconstruction based on old photograph (cf. cat.no. 9, code 3.4.1): top-view showing Grid B; in A and B the location of notches for joints with Grid B are indicated with a dotted line; scale 1:20.



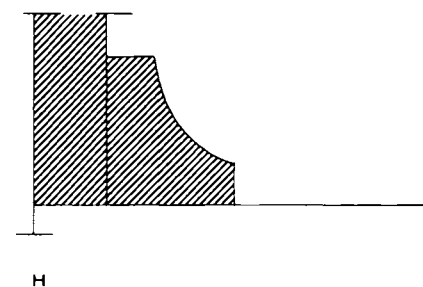
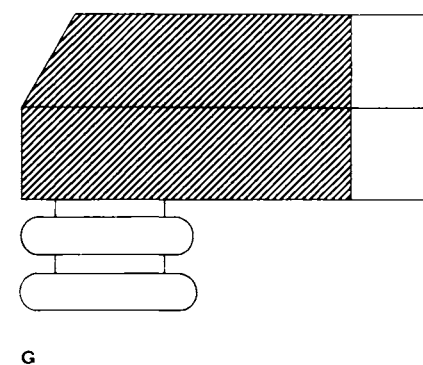
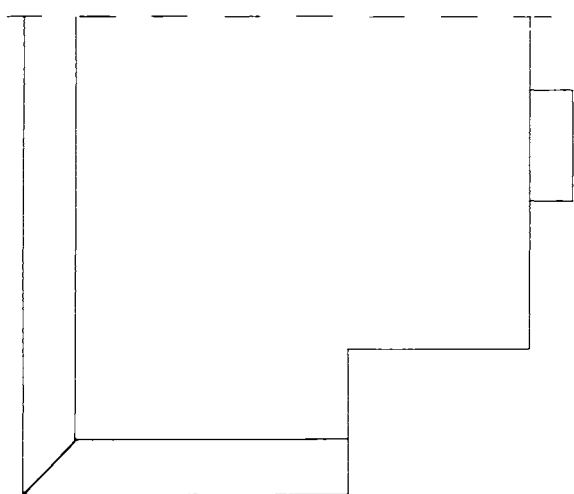
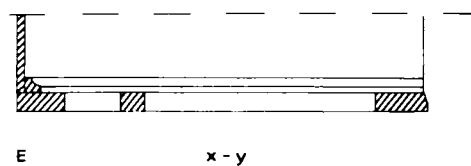
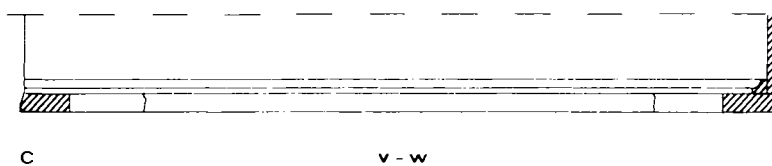
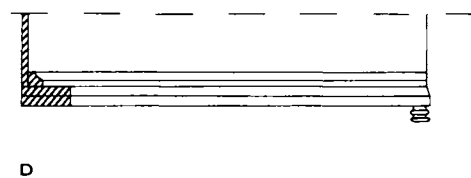
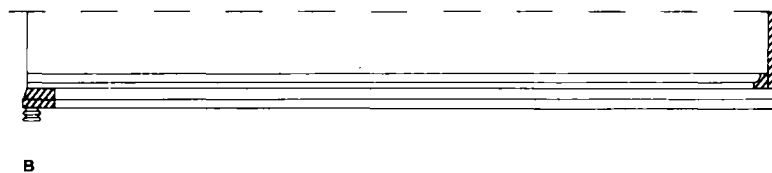
65



66



67. Bed from the Collegio degli Augustali, Herculaneum (cat.no. 10): A. top view (front side-rail reconstructed); B. front view (front side-rail reconstructed); C. cross-section v-w (towards back); D. side view; E. cross-section x-y (towards right; front side-rail reconstructed); F. detail left-hand cross-rail, top view (above) and head on (below), showing tenon for joint; G. left-hand cross-rail, detail left-hand bottom corner B; H. detail moulding at angle of board and bedframe (cf. D); the broken lines in A-E indicate that the original boards were higher; A-E scale 1:20; F-H: scale 1:2.

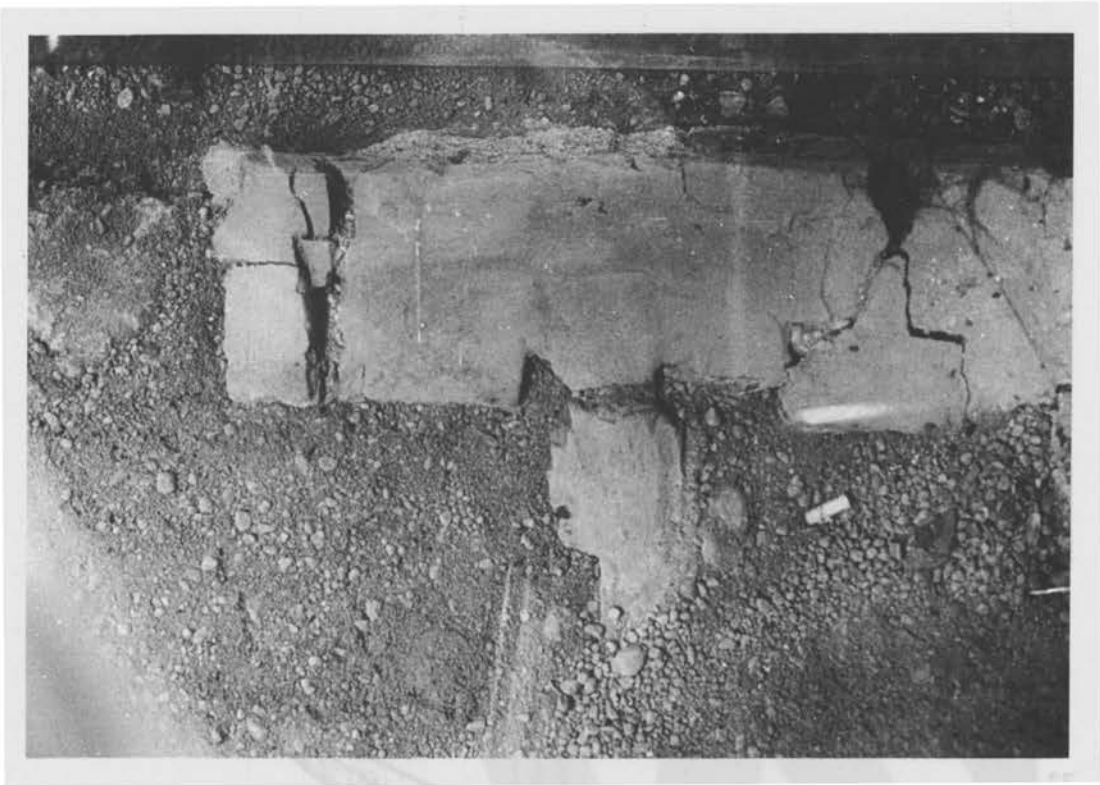




68



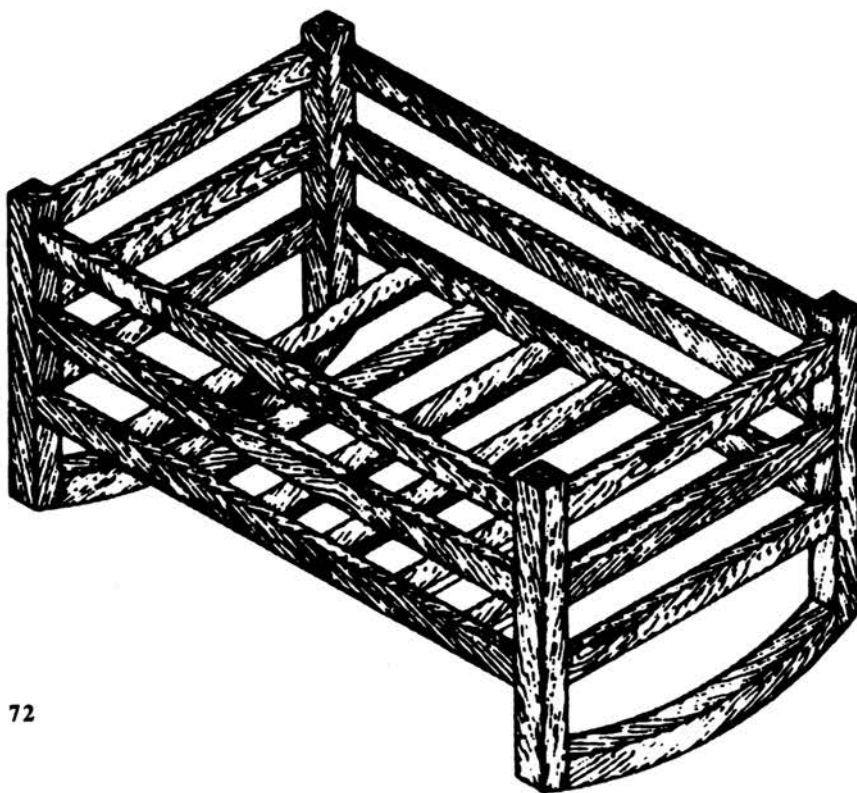
69



70



71



72



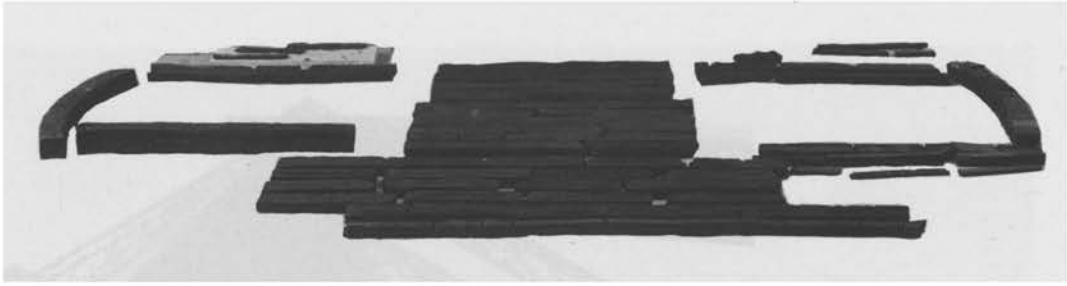
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74



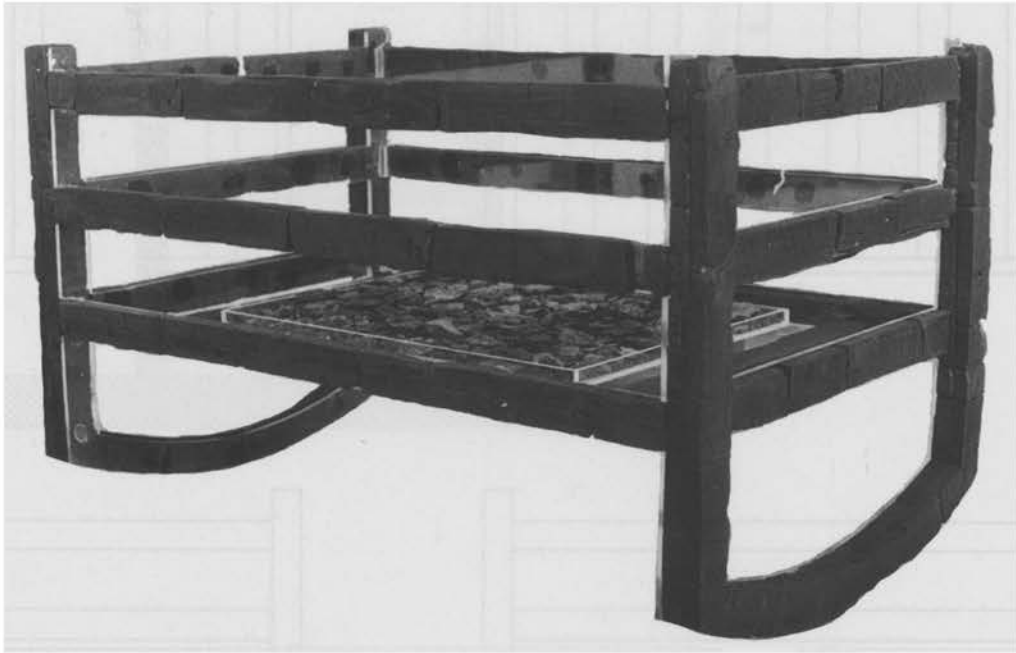
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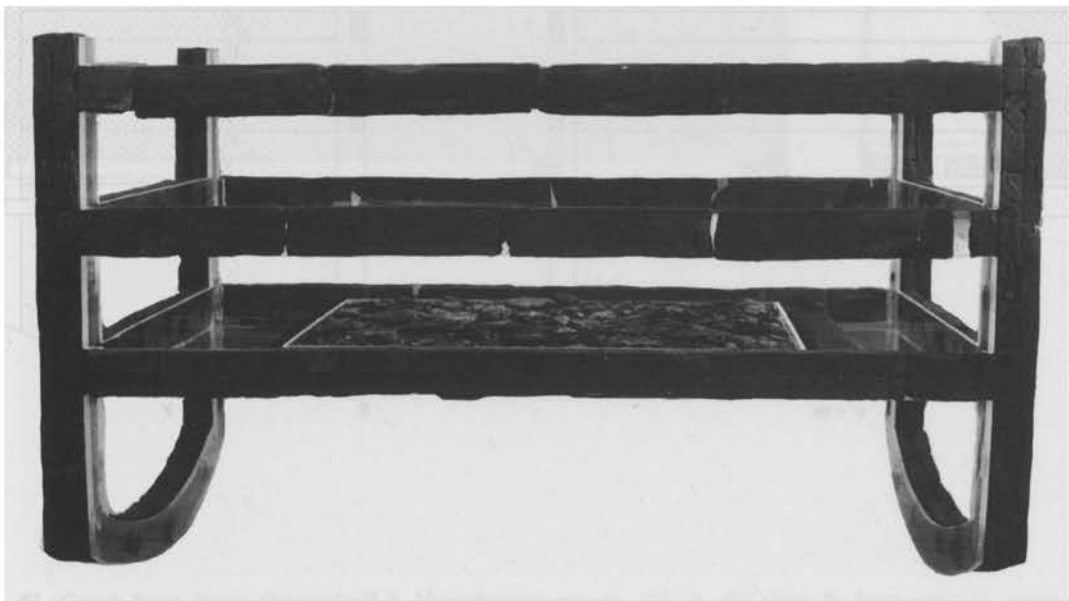
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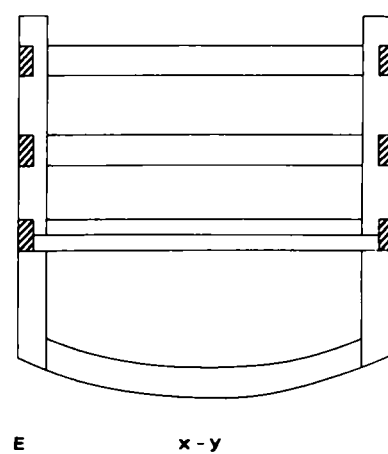
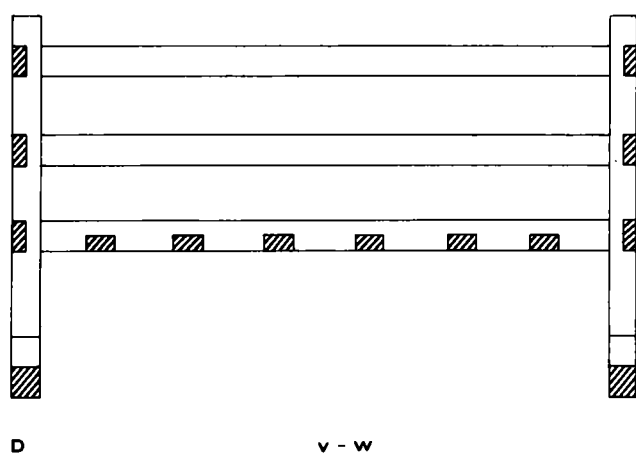
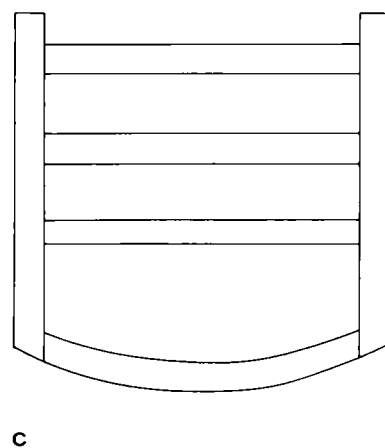
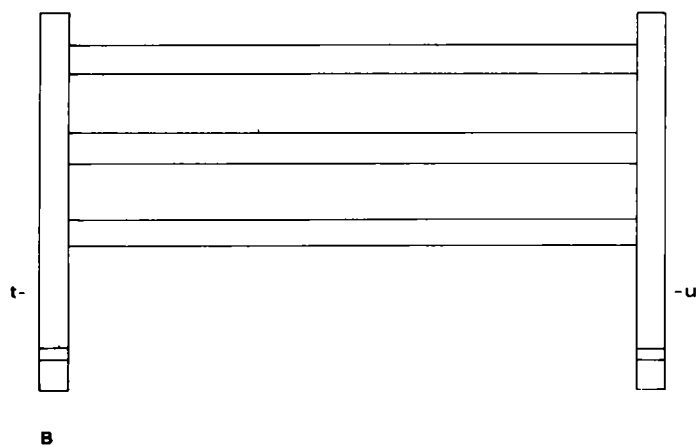
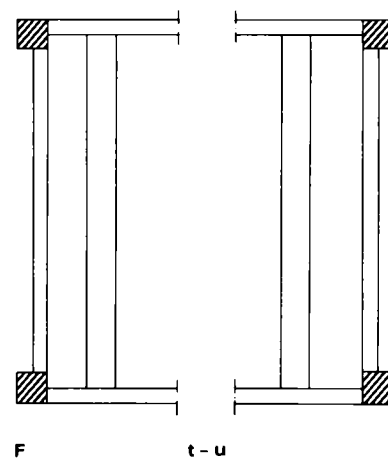
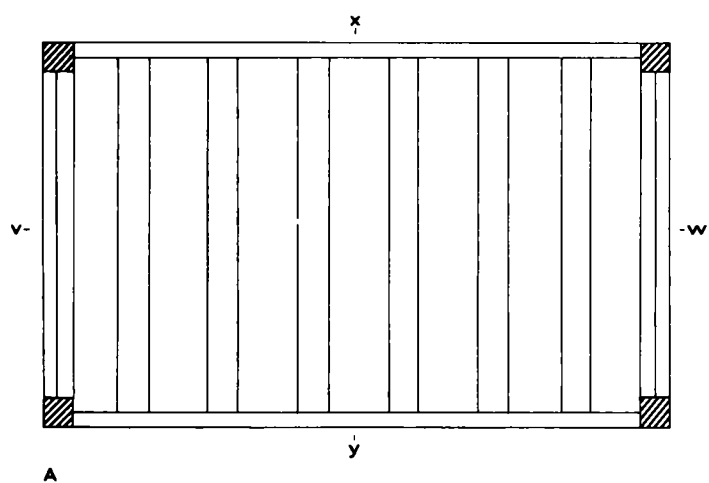
77



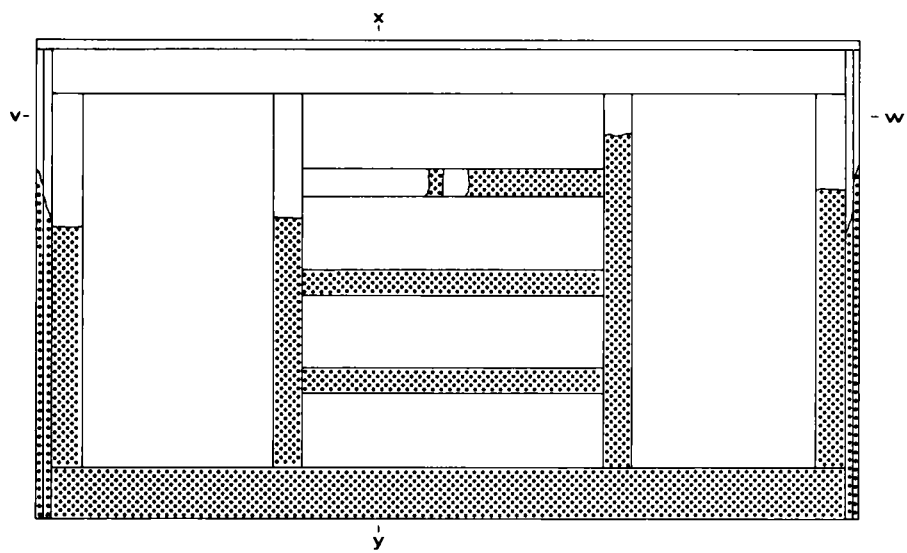
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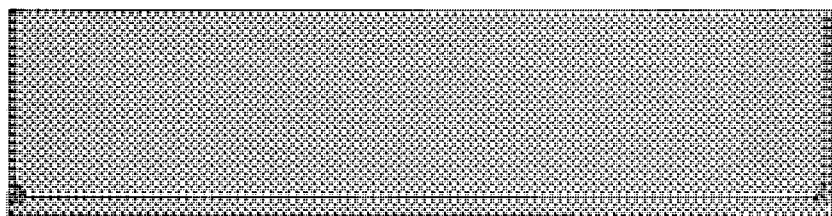
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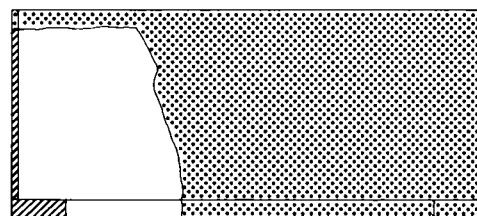
80. Cradle from *Insula I 1a*, Herculaneum (cat.no. 11): A. top view; B. front view; C. side view; D. cross-section v-w; E. cross-section x-y; F. cross-section t-u (upwards): incorrect reconstruction 1987; A-F: scale 1:10.



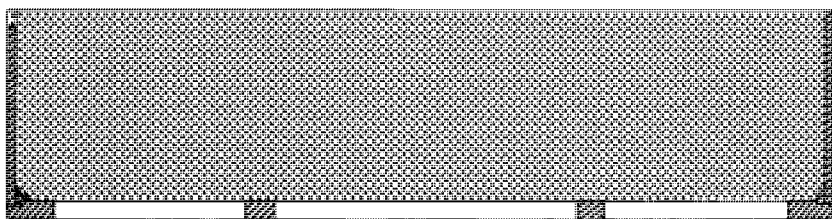
A



B

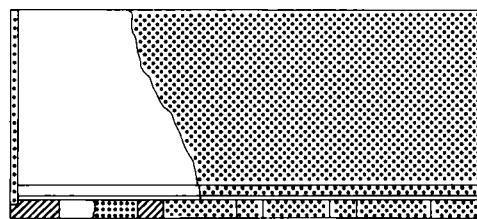


D



C

v - w



E

x - y

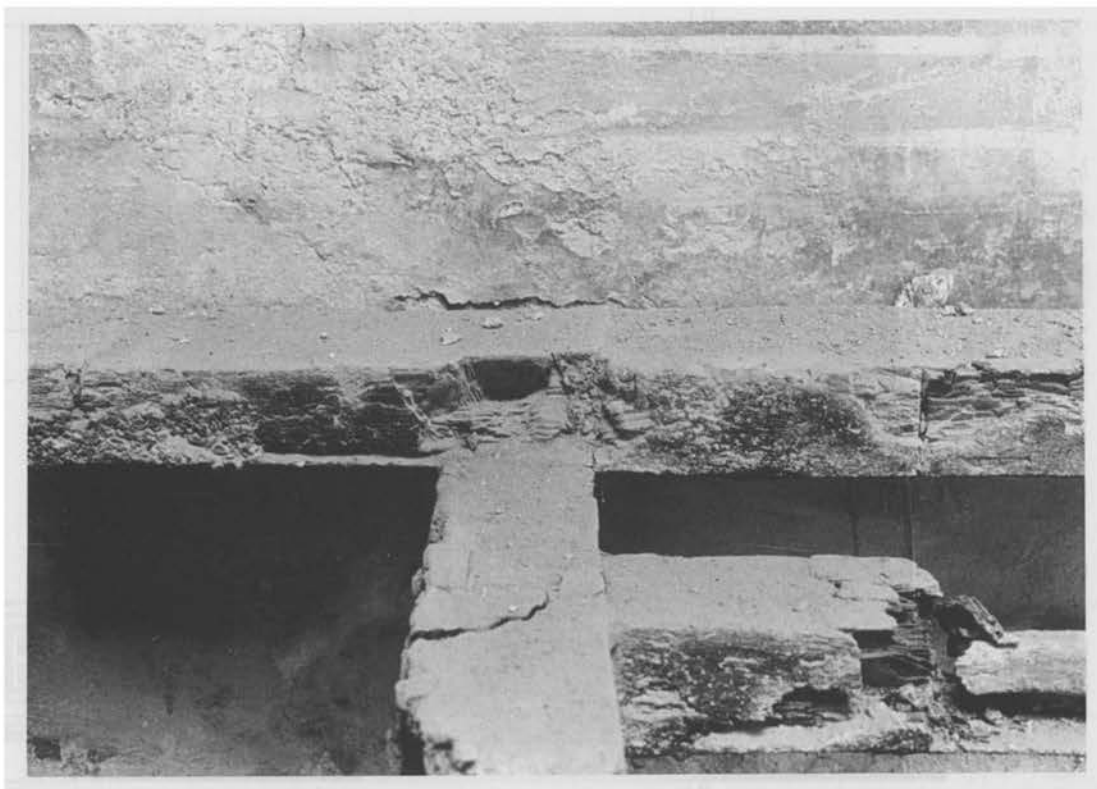
81. Couch from *Insula Orientalis* II 9, Herculaneum (cat.no. 12): A. top view; B. front view; C. cross-section v-w; D. side view (left); E. cross-section x-y; scale 1:20.



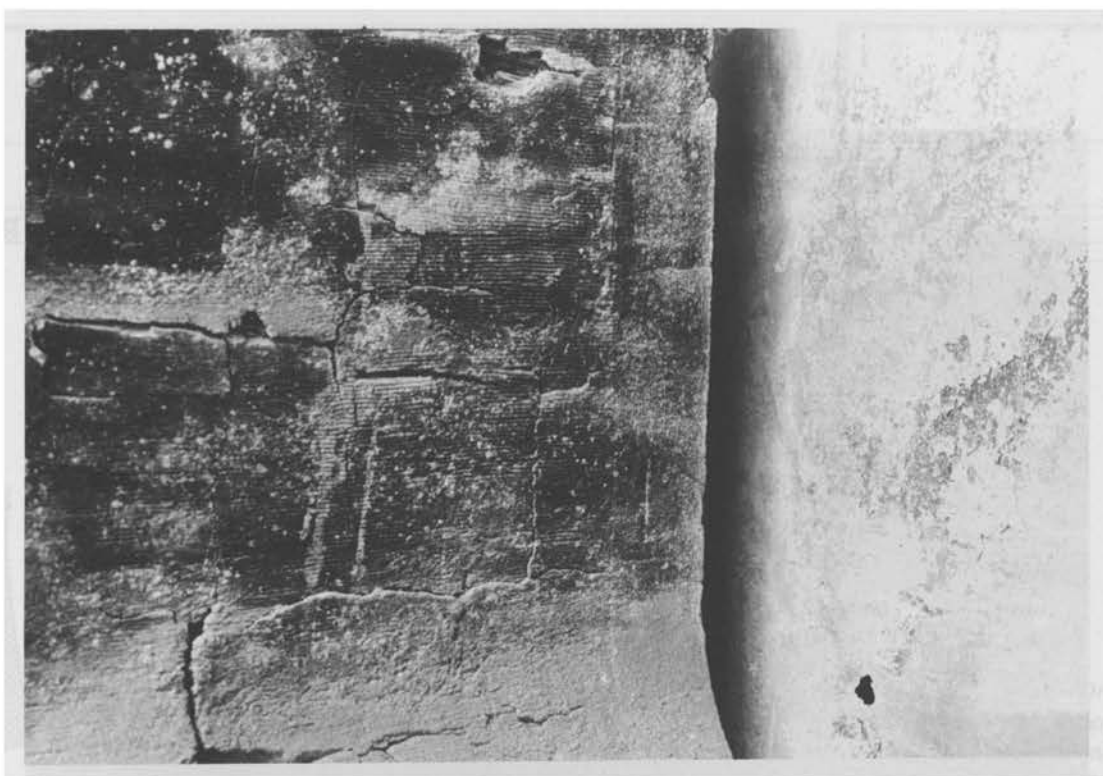
82



83



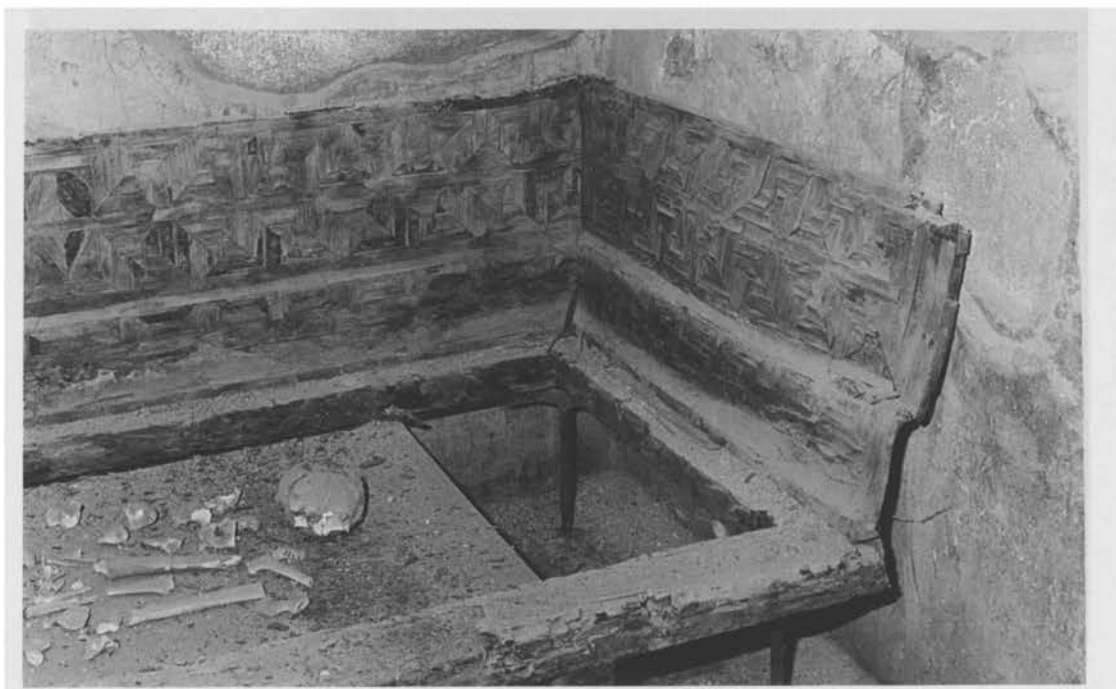
84



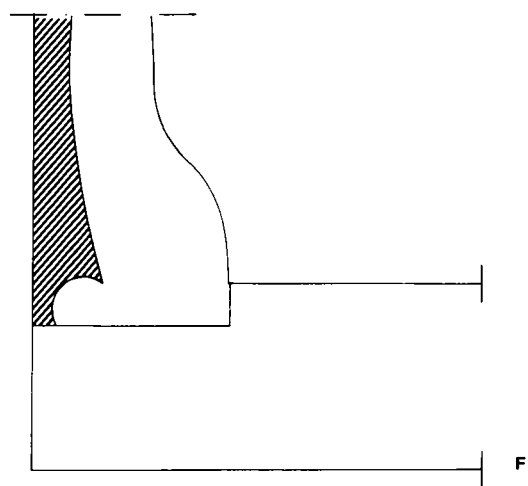
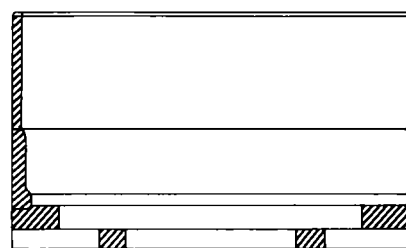
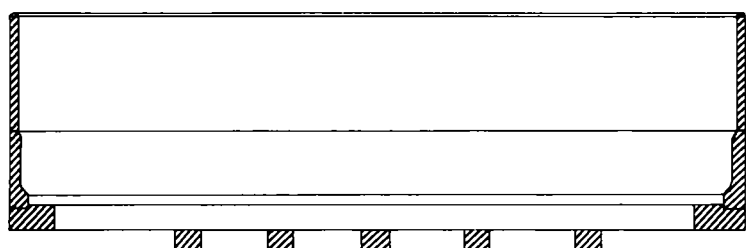
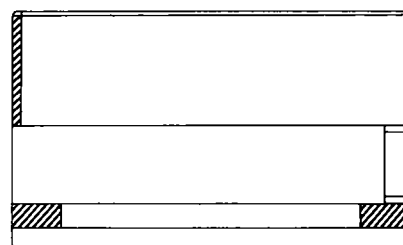
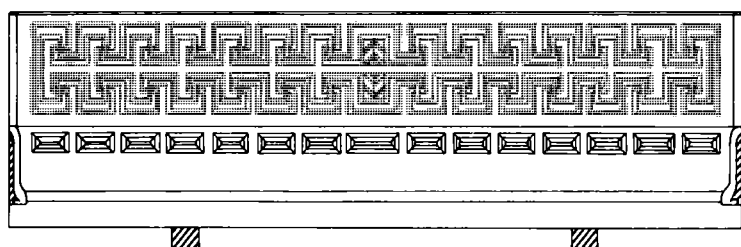
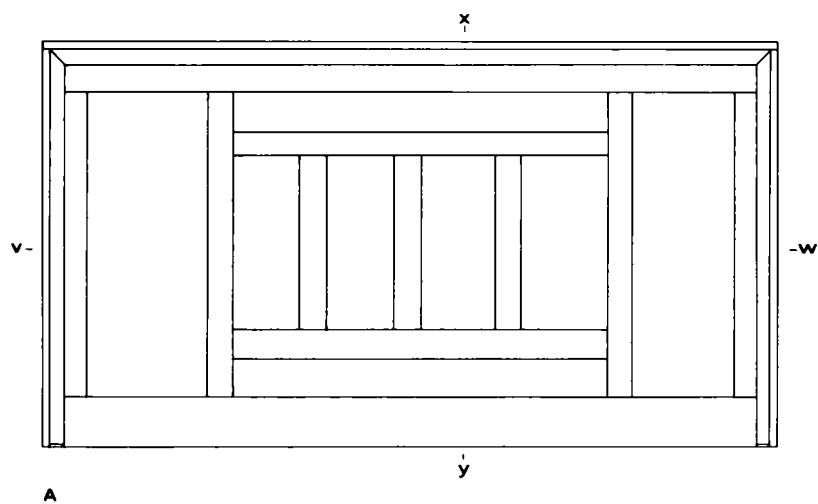
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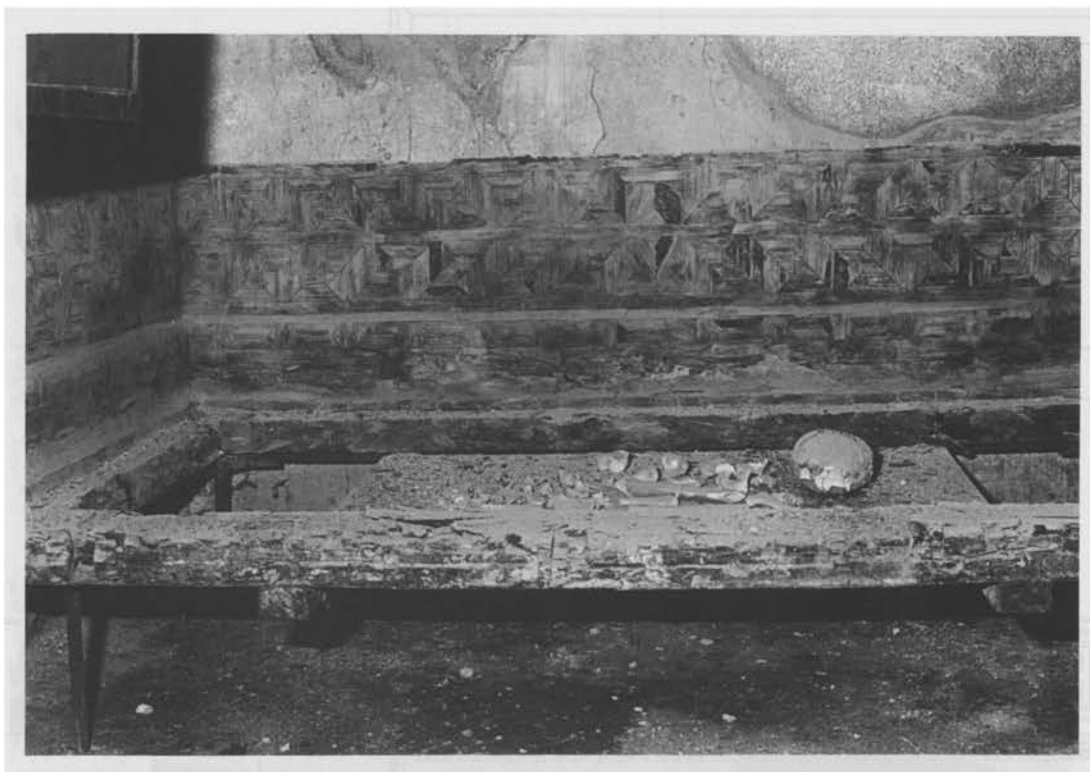
86



87



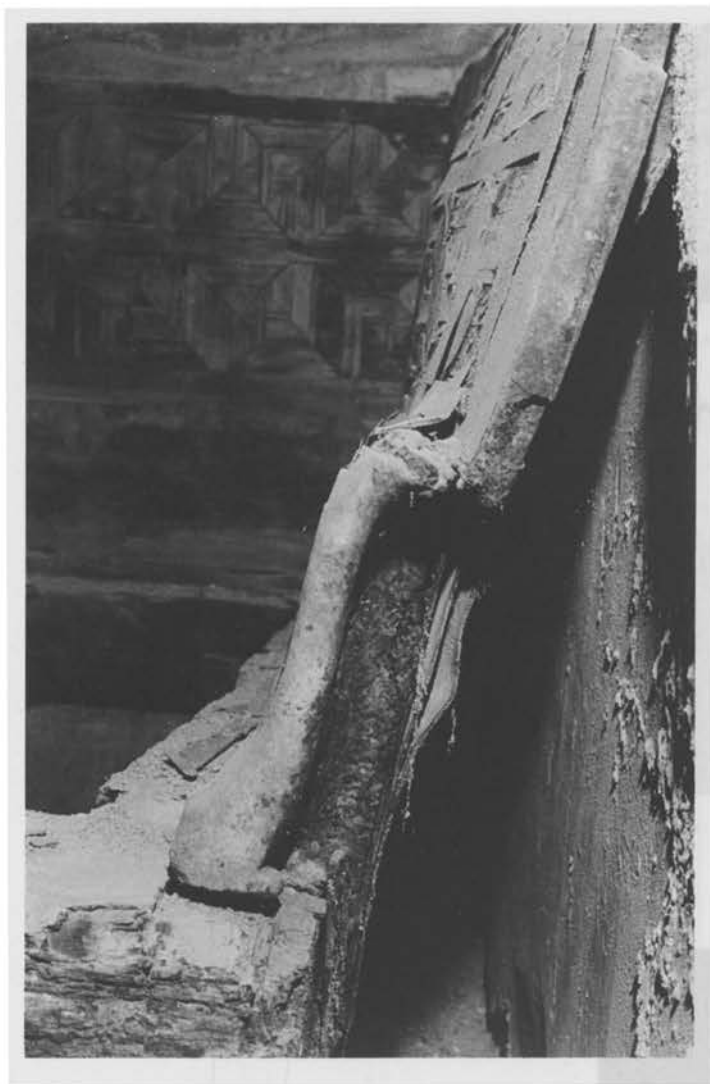
88. Couch from *Insula Orientalis* II 10, Herculaneum (cat.no. 13): A. top view; B. front view with sketch of decoration on rear board; C. cross-section v-w (towards back, board decoration omitted); D. side view (left); E. cross-section x-y (towards right; board decoration omitted); F. detail of B; decorative borders on top of bedframe not indicated, see fig. 90; A-E: scale 1:20; F. scale 1:2.



89



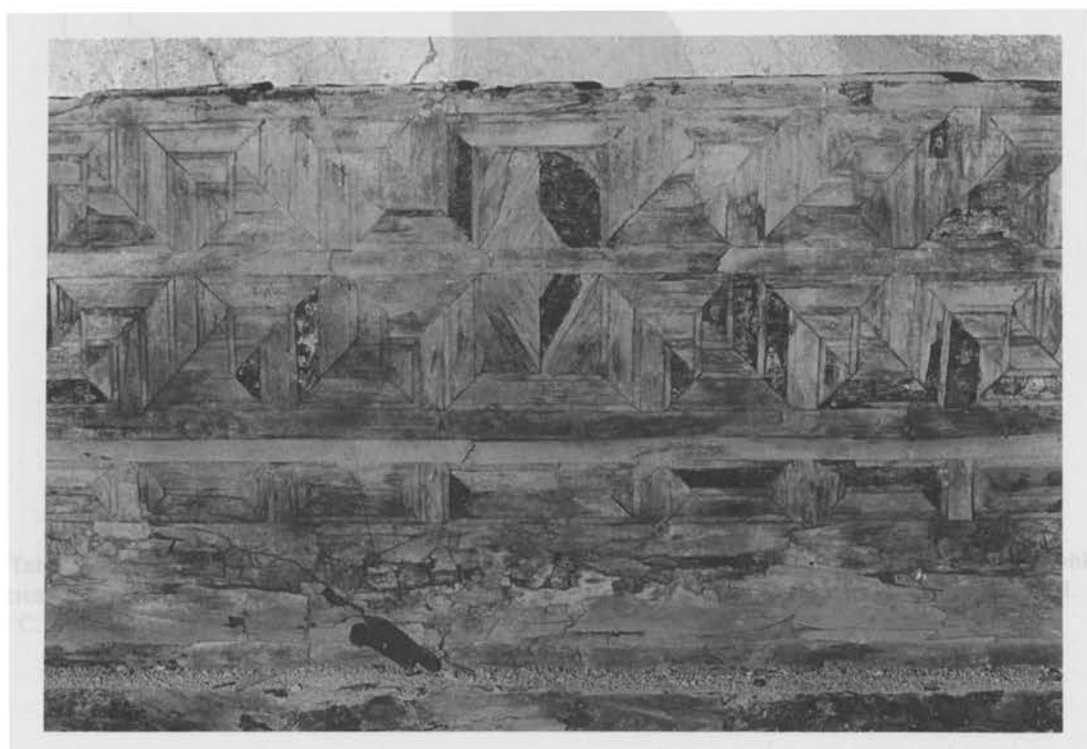
90



91



92



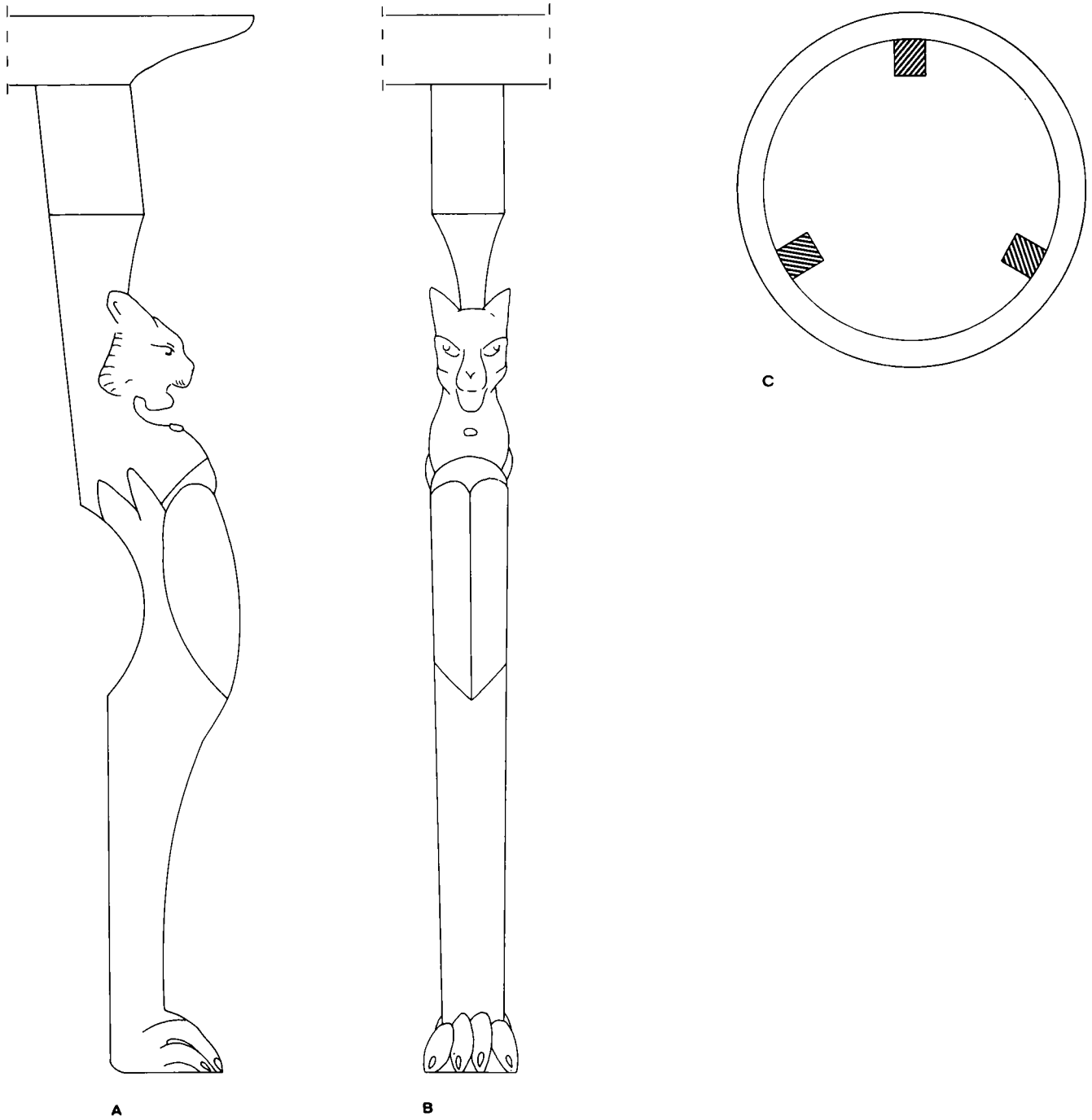
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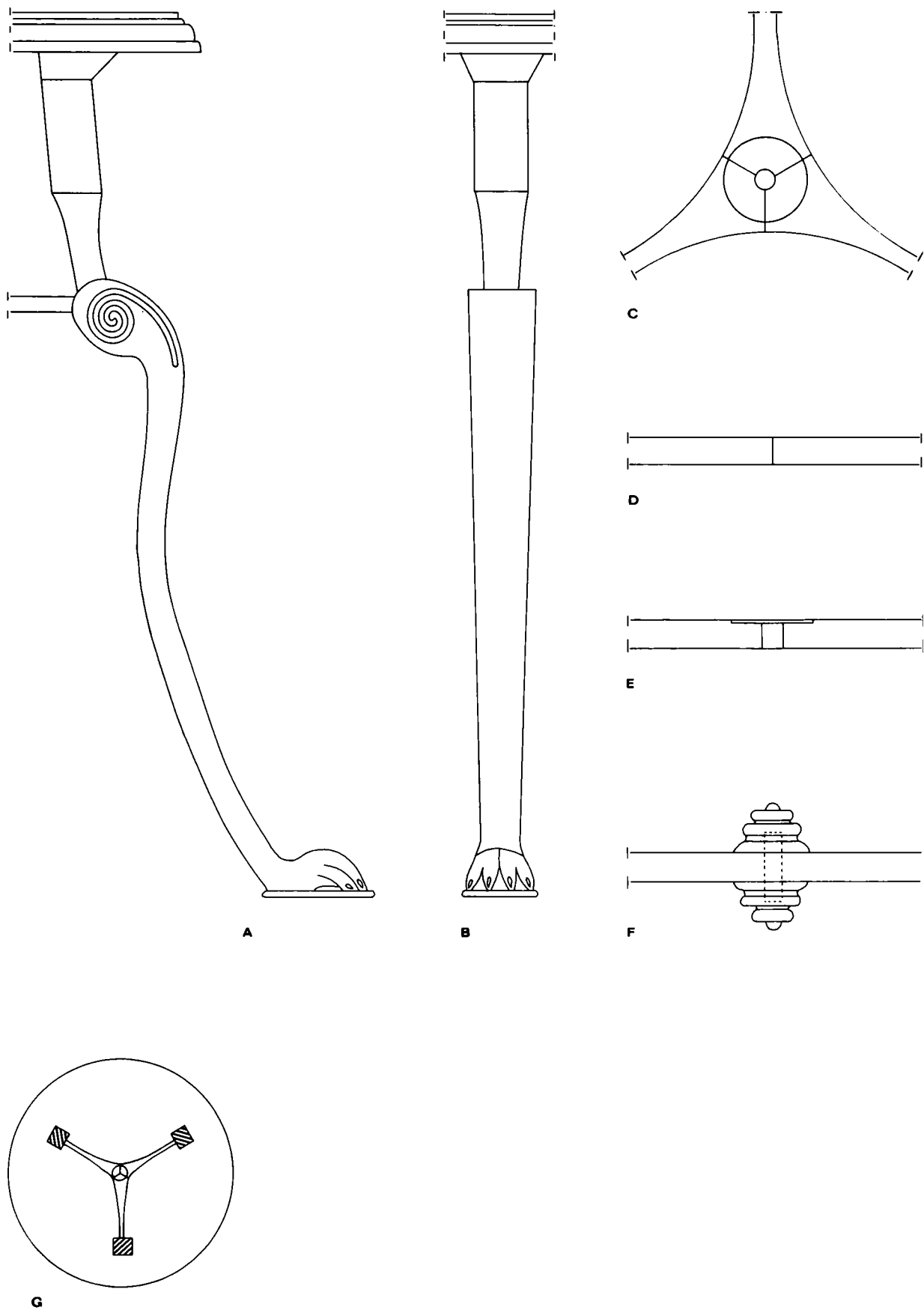
94



95



96. Table from Herculaneum (cat.no. 14): A. side view leg with edge tabletop; B. front view leg with edge tabletop; C. cross-section just below tabletop (looking up) showing legs meeting tabletop; damage not indicated; A-B. scale 1:4; C. scale 1:10.



97. Table from the Casa del Mobilio Carbonizzato, Herculaneum (cat.no. 15): A. side view leg with edge tabletop; B. front view leg with edge tabletop; C. top view junction stretchers; D. front view junction stretchers; E. cross-section junction stretchers; F. reconstruction junction stretchers with two bosses and central pin (dotted line); G. cross-section below stretchers (looking up) showing legs meeting tabletop; damage not indicated; A-B. scale 1:4; C-F. scale 1:2; G. scale 1:10.



98



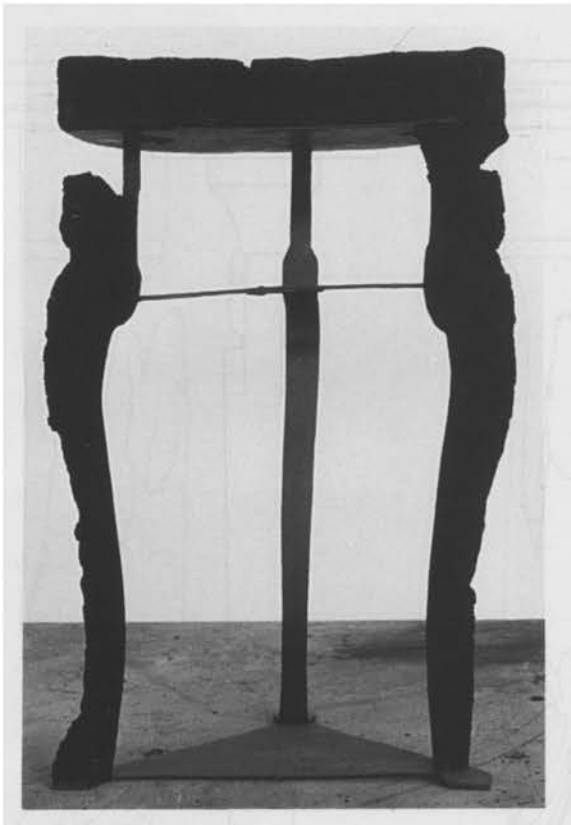
99



100



101



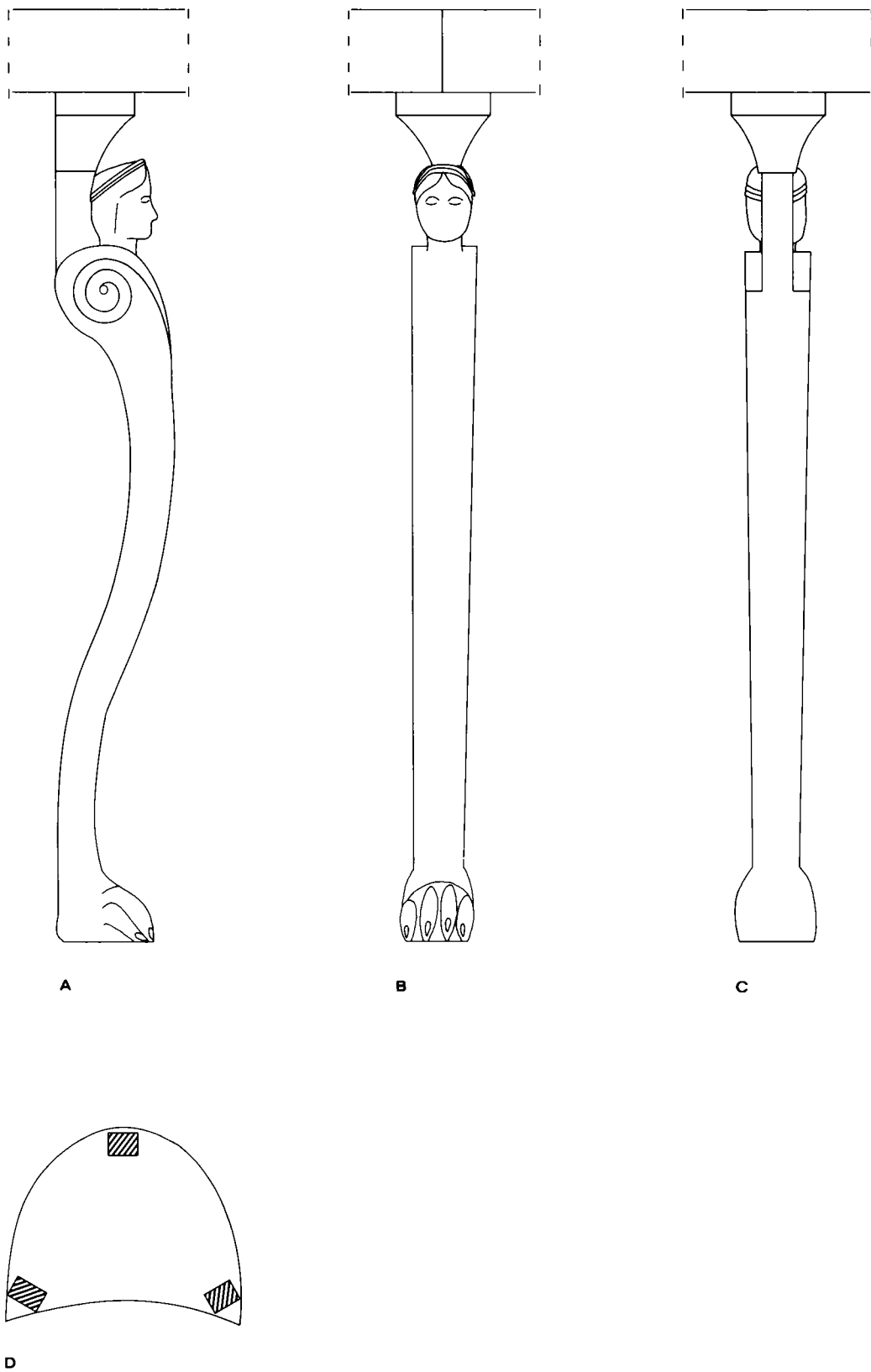
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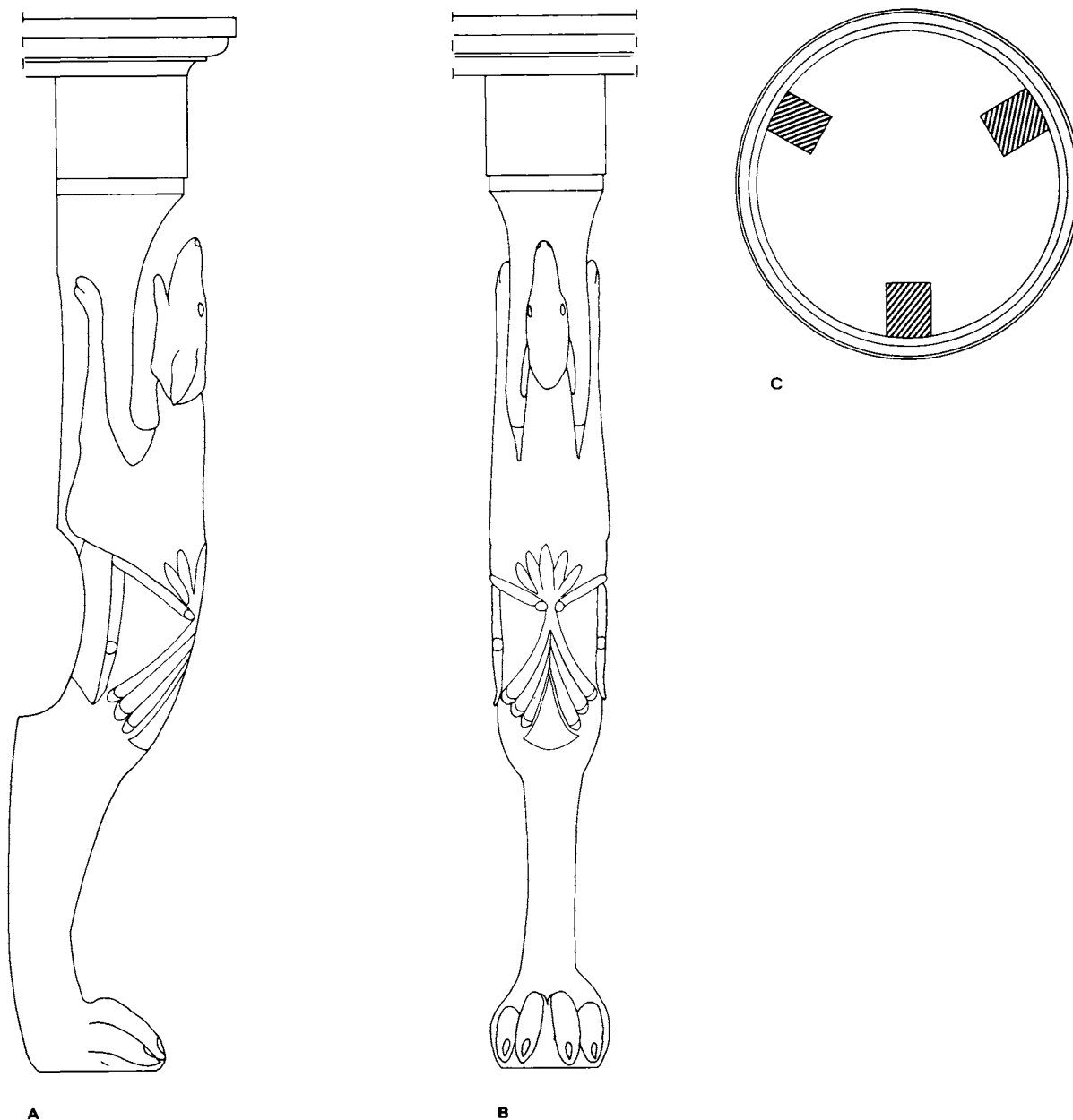
103



104



105. Table from the Casa del Bel Cortile, Herculaneum (cat.no. 16): A. side view leg with edge tabletop; B. front view leg with edge tabletop; C. rear view leg with edge tabletop; D. cross-section just below tabletop (looking up) showing legs meeting tabletop; damage not indicated; A-C. scale 1:4; D. scale 1:10.



106. Table from the Collegio degli Augustali, Herculaneum (cat.no. 17): A. side view leg with edge tabletop (reconstruction); B. front view leg with edge tabletop (reconstruction); C. cross section just below tabletop (looking up) showing legs meeting tabletop; damage not indicated; A-B. scale 1:4; C. scale 1:10.



107



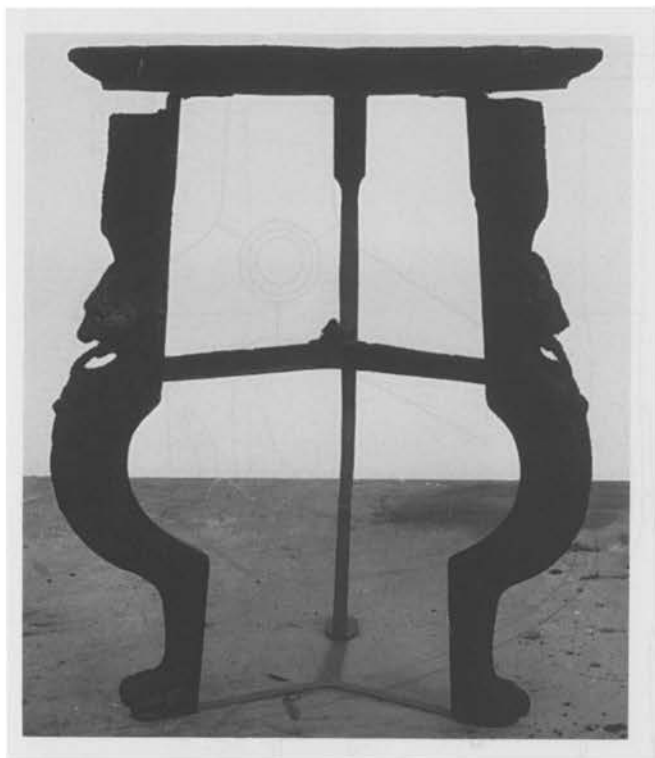
108



109



110



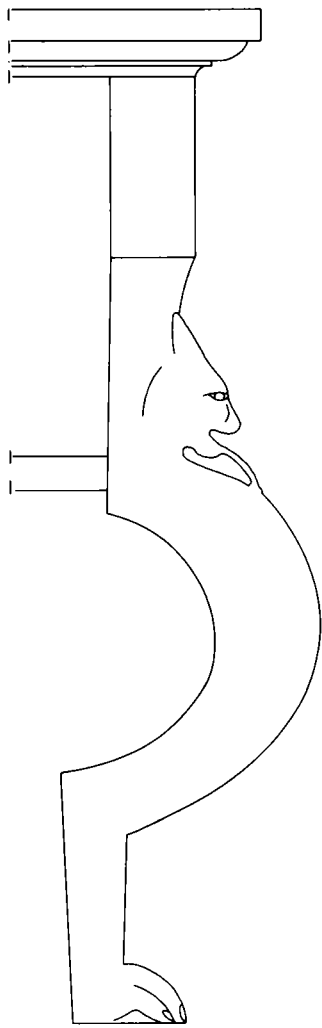
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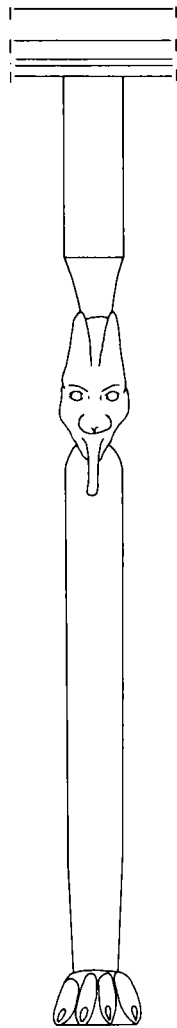
112



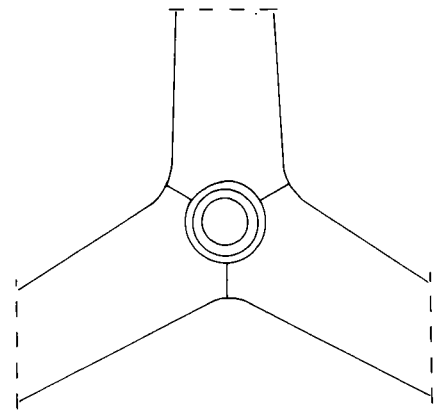
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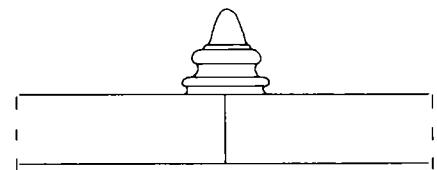
A



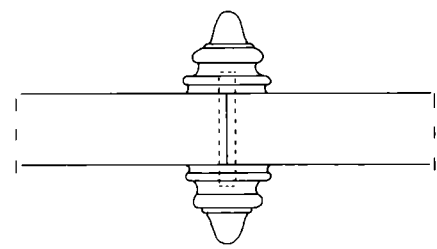
B



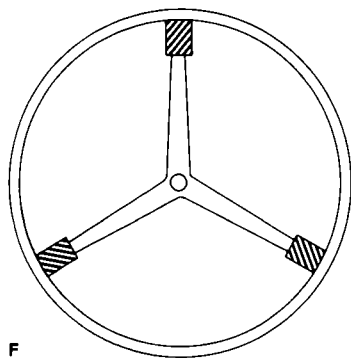
C



D

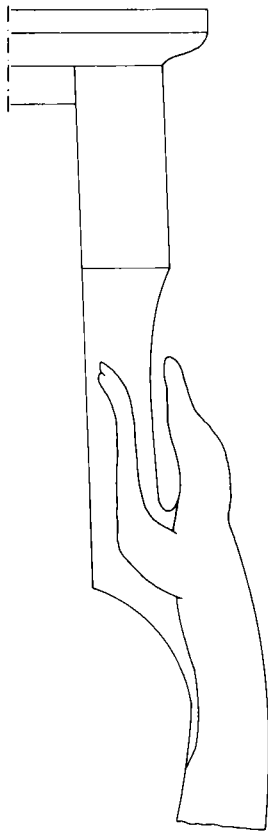


E

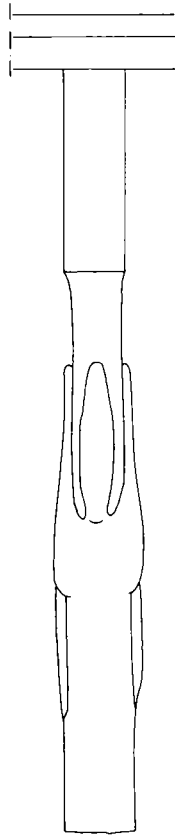


F

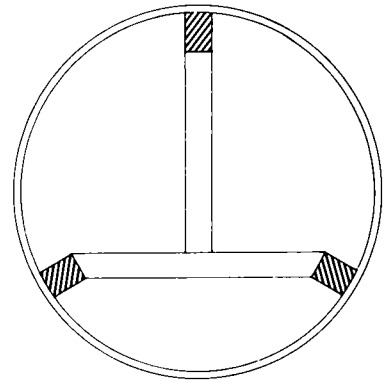
114. Table from the Casa dell'Atrio Corinzio, Herculaneum (cat.no. 18): A. side view leg with edge tabletop; B. front view leg with edge tabletop; C. top view junction stretchers; D. front view junction stretchers; E. reconstruction junction stretchers with two bosses and central pin (dotted line); F. cross-section below stretchers (looking up) showing legs meeting tabletop; damage not indicated; A-B. scale 1:4; C-E. scale 1:2; F. scale 1:10.



A

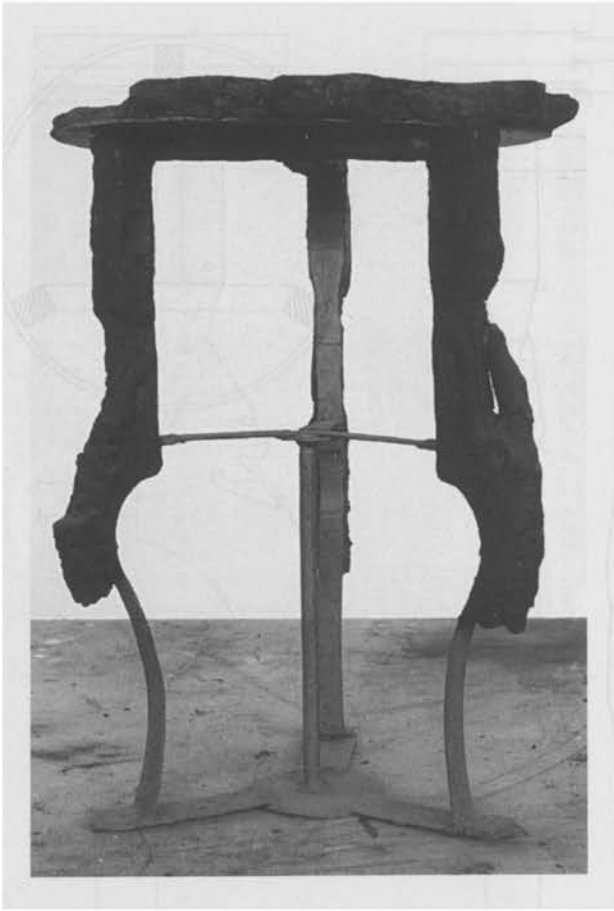


B



C

115. Table from *Insula Orientalis* I 1a, Herculaneum (cat.no. 19): A. side view leg with edge tabletop; B. front view leg with edge tabletop; C. cross-section just below rails (looking up) showing legs meeting tabletop; damage not indicated; A-B. scale 1:4; C. scale 1:10.



116



117



118



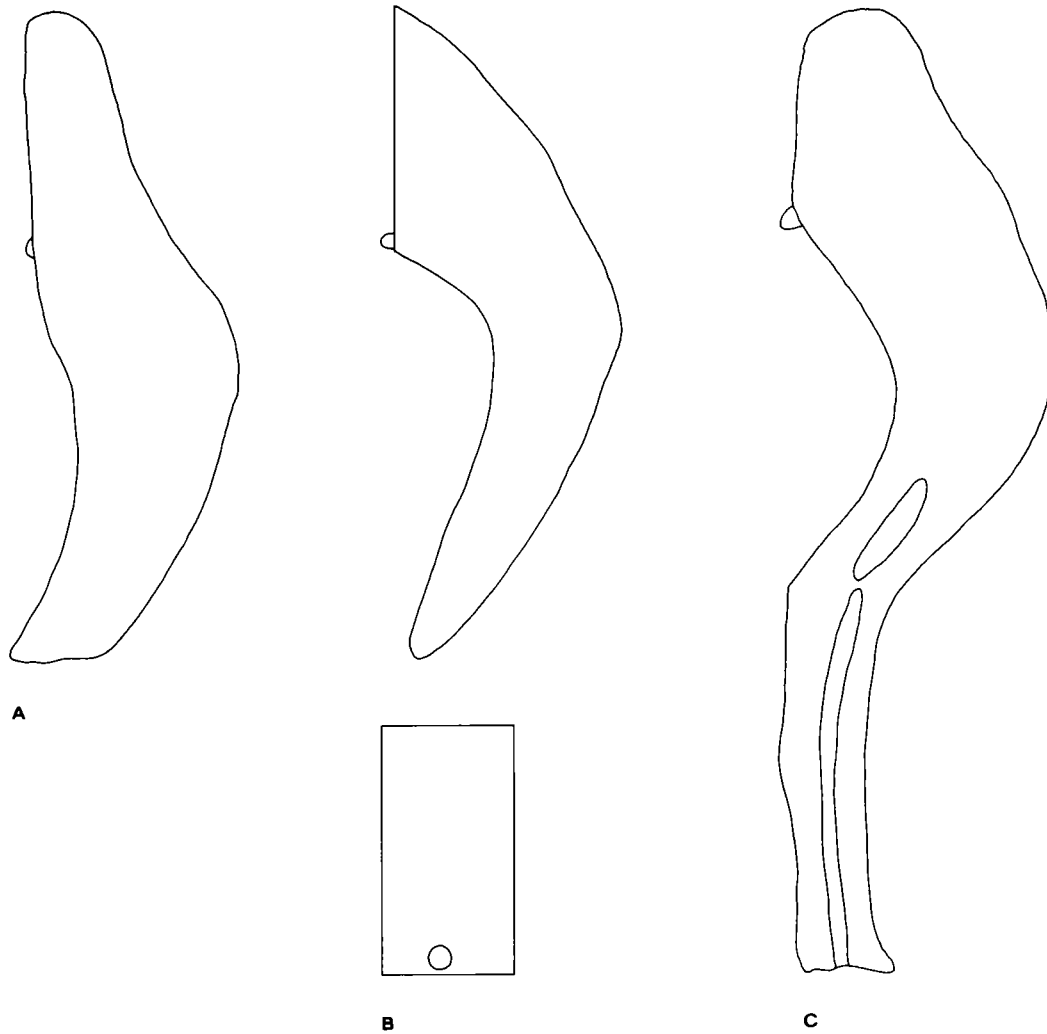
119



120



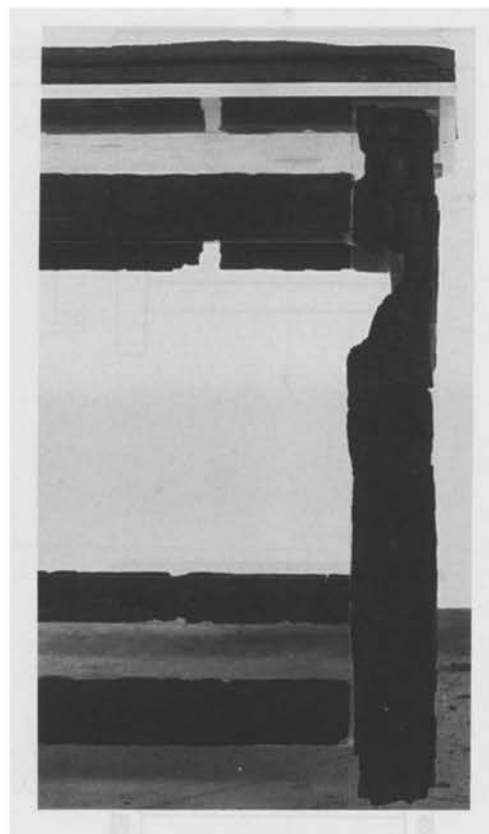
121



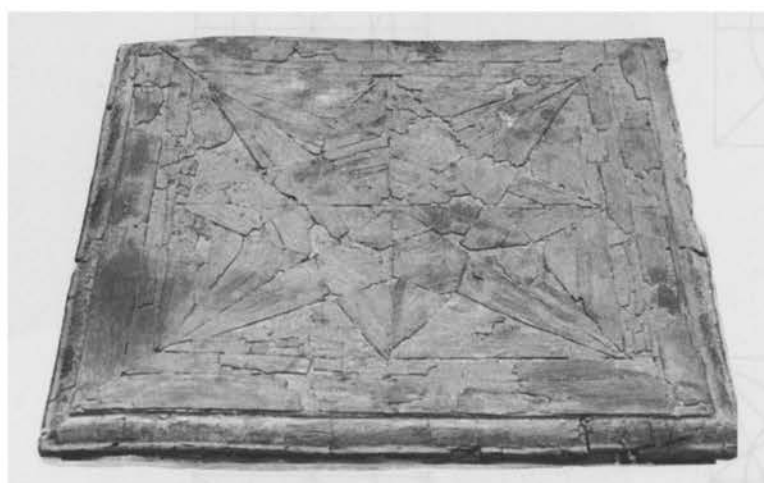
122. Table legs from Herculaneum (cat.nos. 20-22): A. side view cat.no. 20; B. side view and rear view cat.no. 21; C. side-view cat.no. 22; scale 1:4.



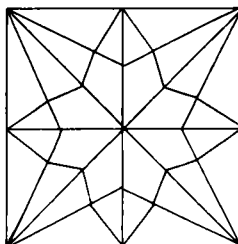
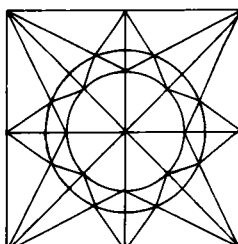
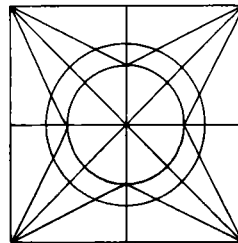
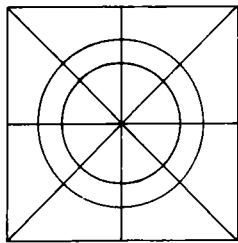
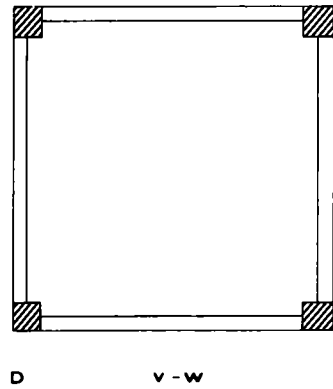
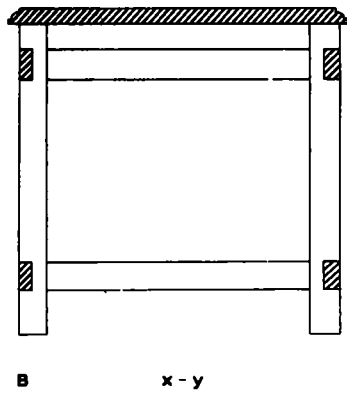
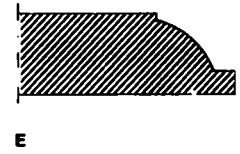
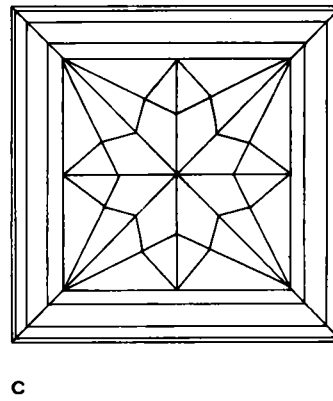
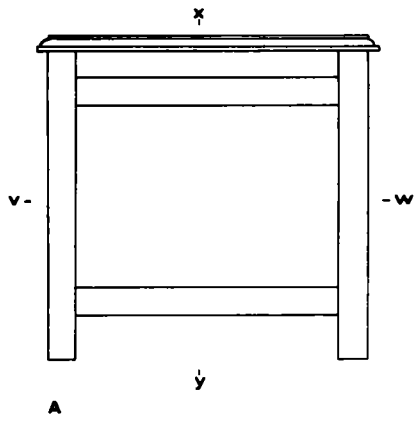
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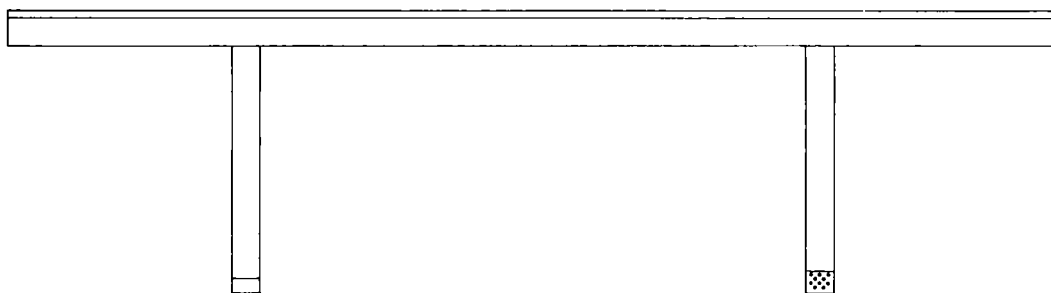
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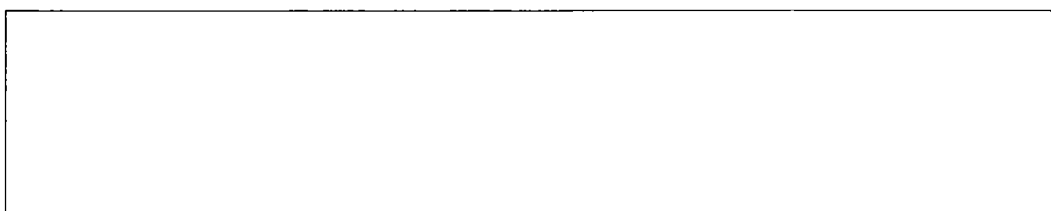
125



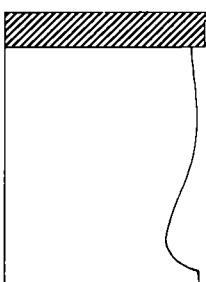
126. Stool from Herculaneum (cat.no. 23): A. front and side view; B. cross-section x-y; C. top view; D. cross-section v-w; E. detail: moulding seat; F-I. four successive phases in plotting the form of a star on the seat; A-D. scale 1:10; E. scale 1:2; damage not indicated; F-I. scale 1:10.



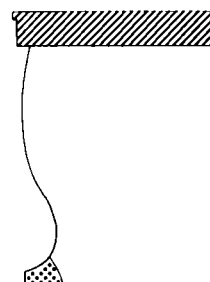
A



B

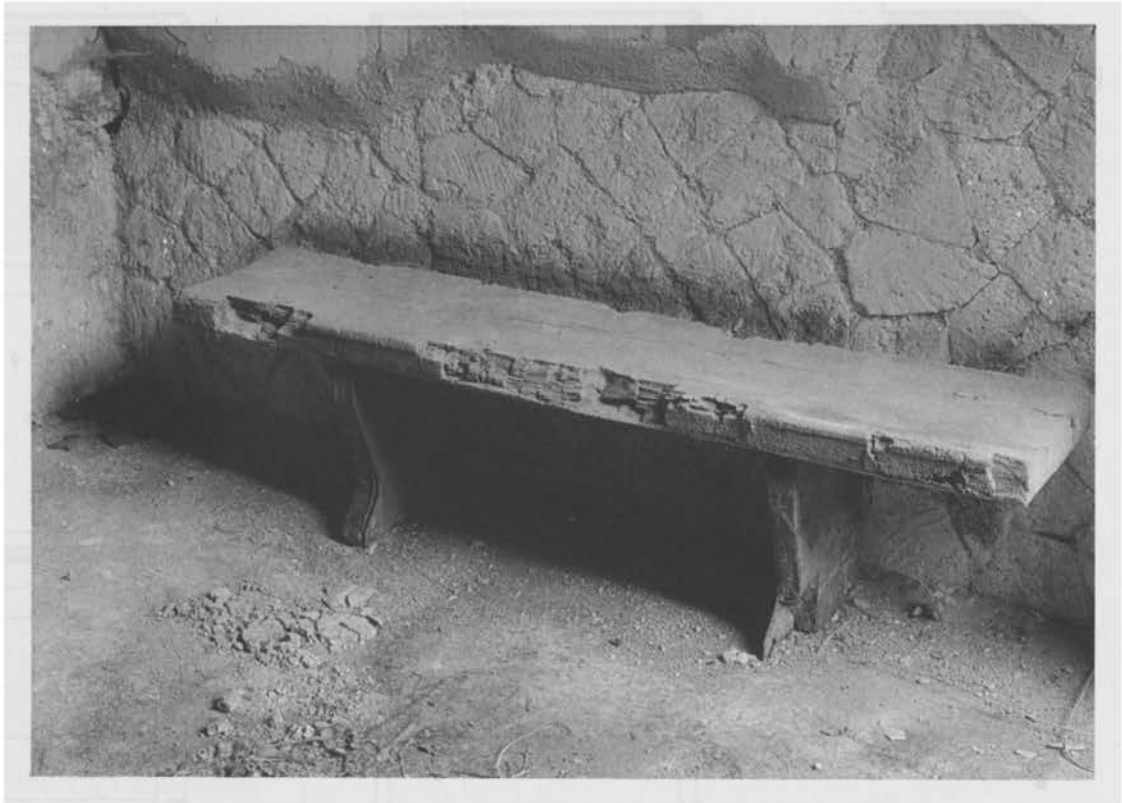


C



D

127. Bench from the Casa del Sacello di Legno, Herculaneum (cat.no. 24): A. front view; B. top view (crumbled edge not indicated); C. side view (left); D. side view (right); damage not indicated; scale 1:10.



128



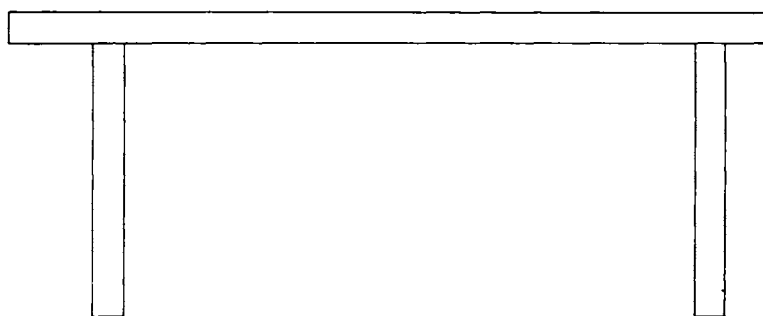
129



130



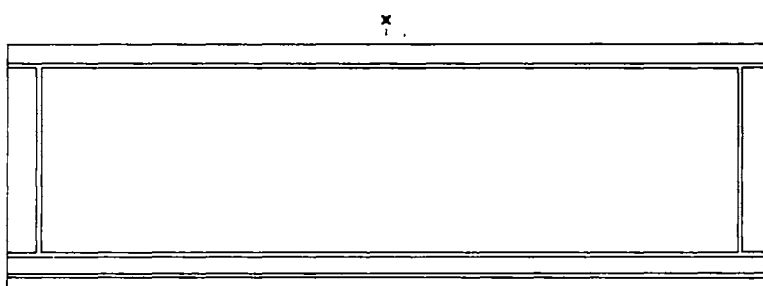
131



A



G



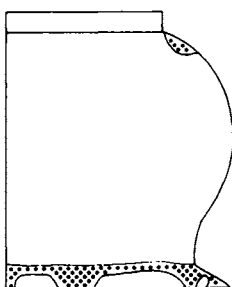
B

y

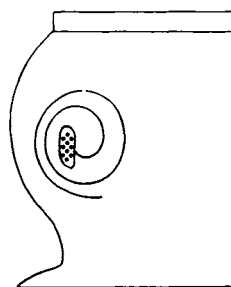


H

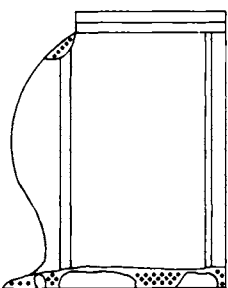
x-y



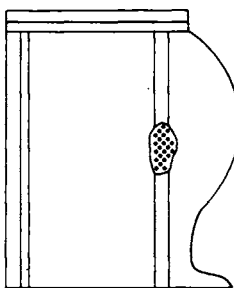
C



D

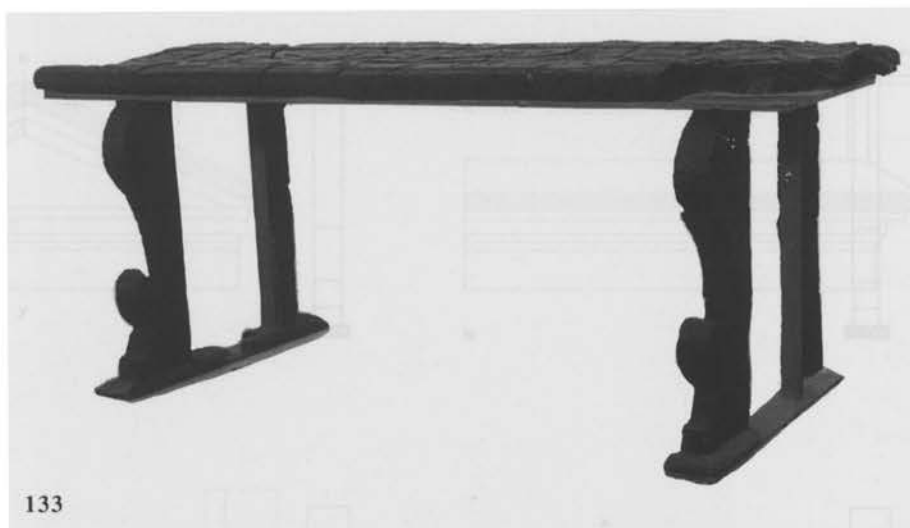


E



F

132. Bench from Herculaneum (cat.no. 25): A. front view (supports positioned as in present reconstruction); B. top view; C. side view left-hand support (outer face); D. side view right-hand support (outer face); E. side-view left-hand support (inner face); F. side-view right-hand support (inner face); G. top of right-hand support showing stepped half-dovetail tongue; H. cross-section x-y; A-F, H: scale 1:10; G: scale 1:2.



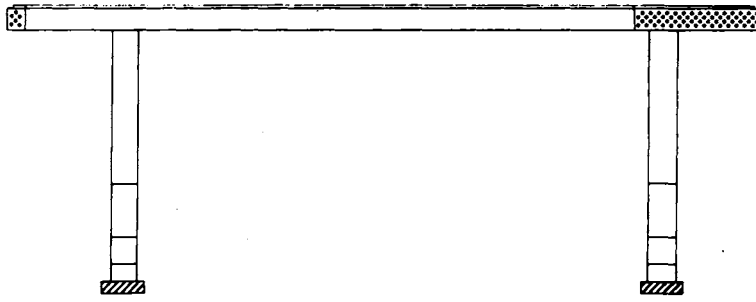
133



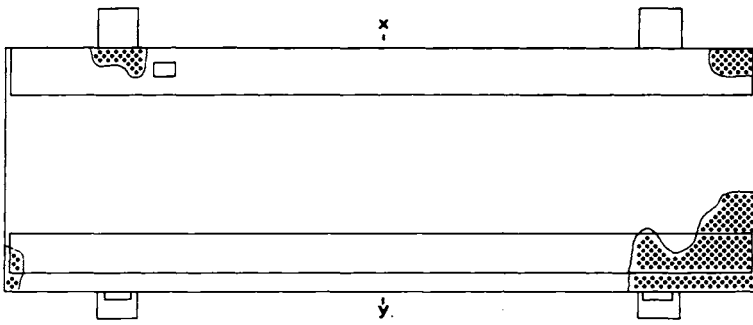
134



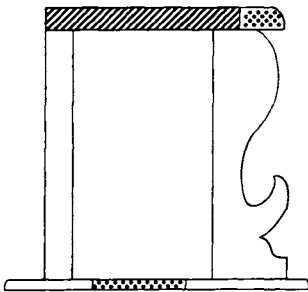
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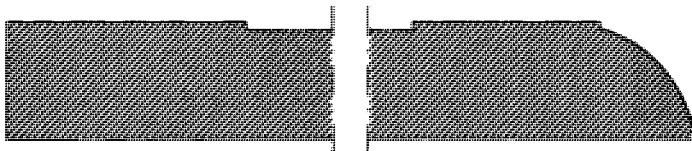
A



B

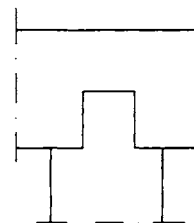


C



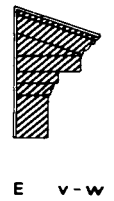
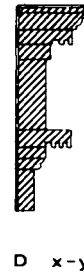
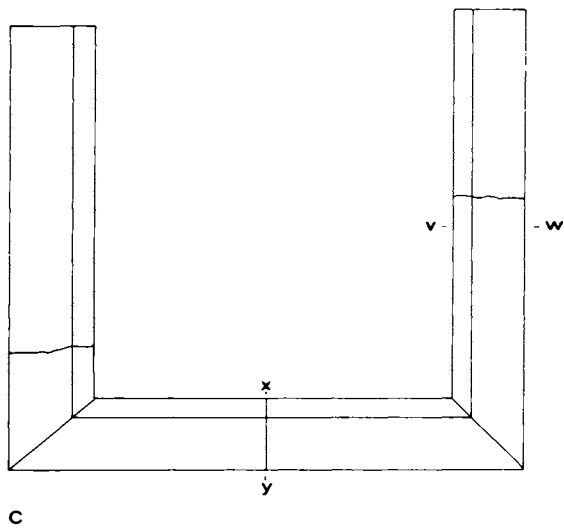
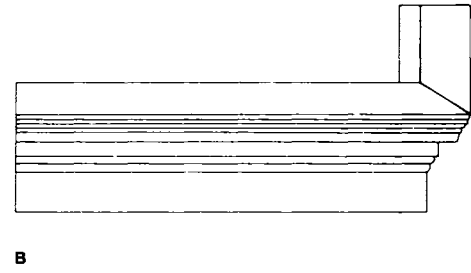
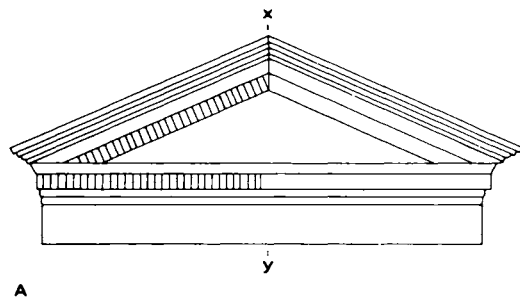
D

x-y

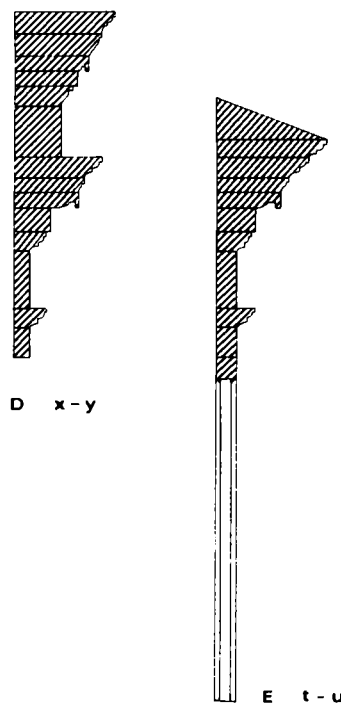
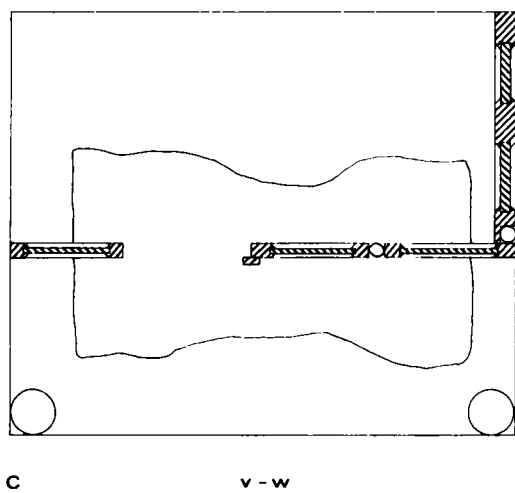
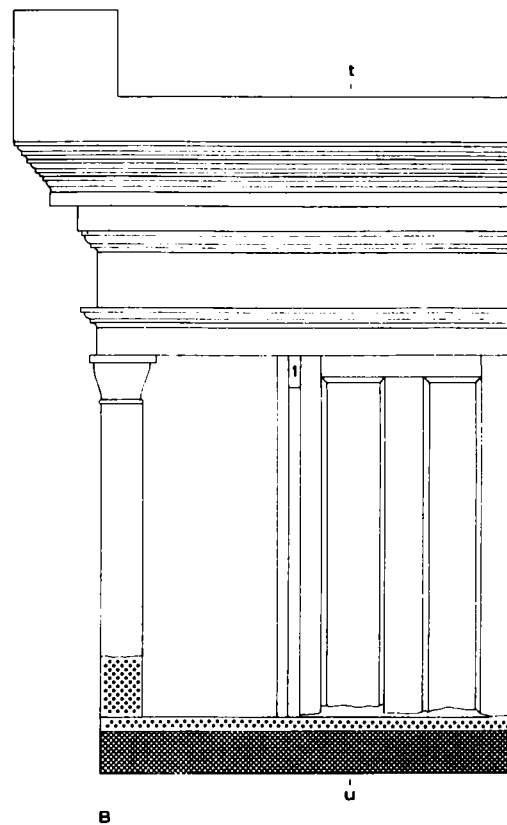
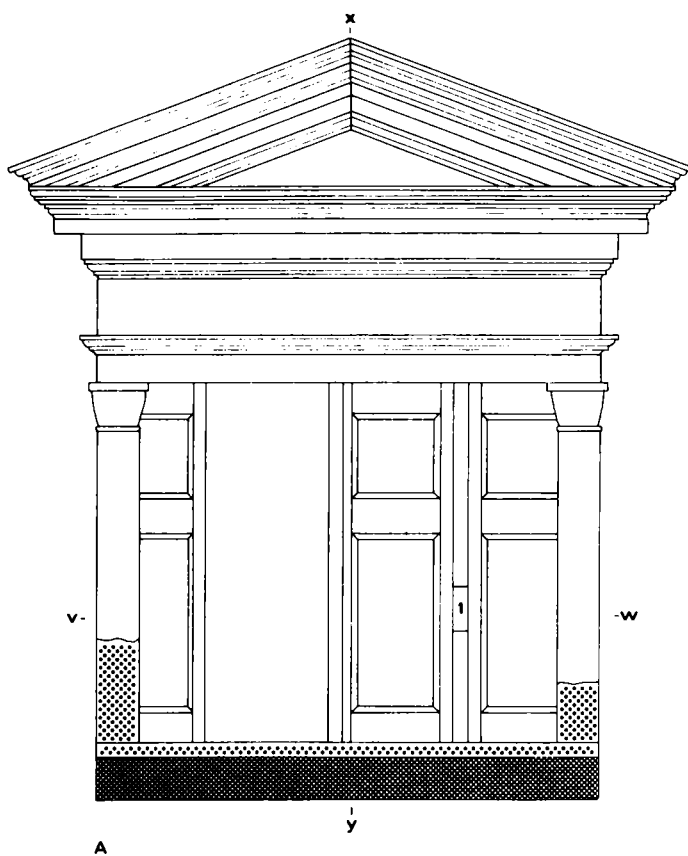


E

136. Bench from Herculaneum (cat.no. 26): A. front view; B. top view; C. side view left; D. cross-section x-y (of seat); E. joint between rear leg and seat, from behind; A-C: scale 1:10; D-E: scale 1:2.



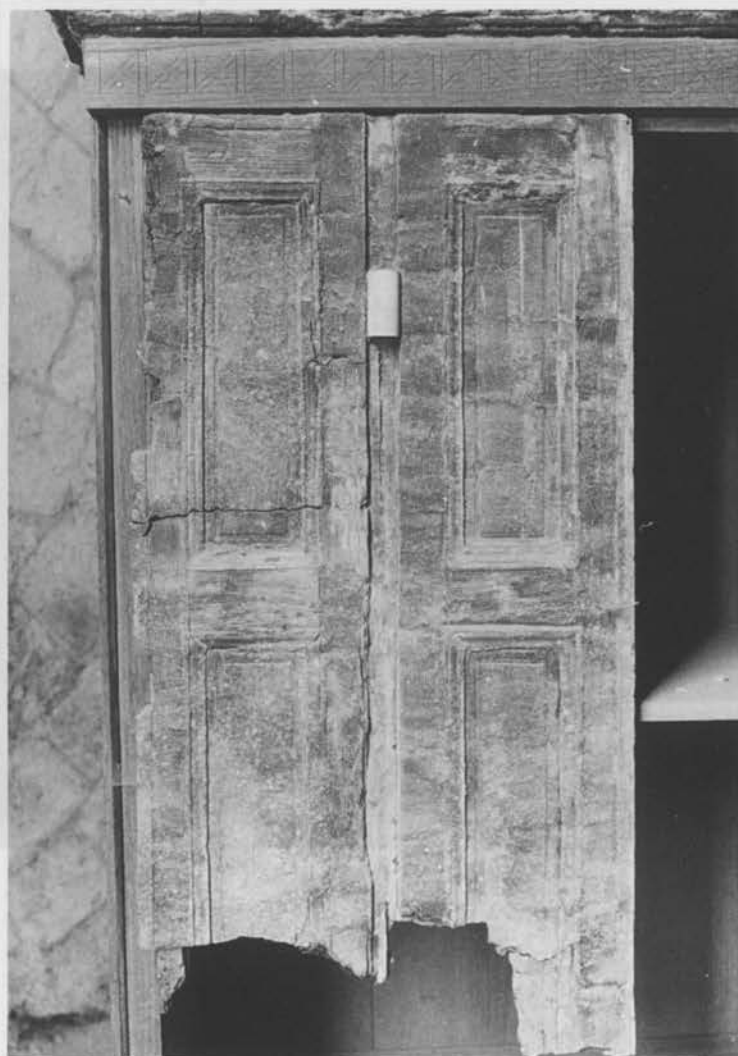
137. *Aedicula* from the Casa a Graticcio, Herculaneum (cat.no. 27): A. front view; B. side view; C. top view; D. cross-section x-y (towards right); E. cross-section v-w (towards back); scale 1:10.



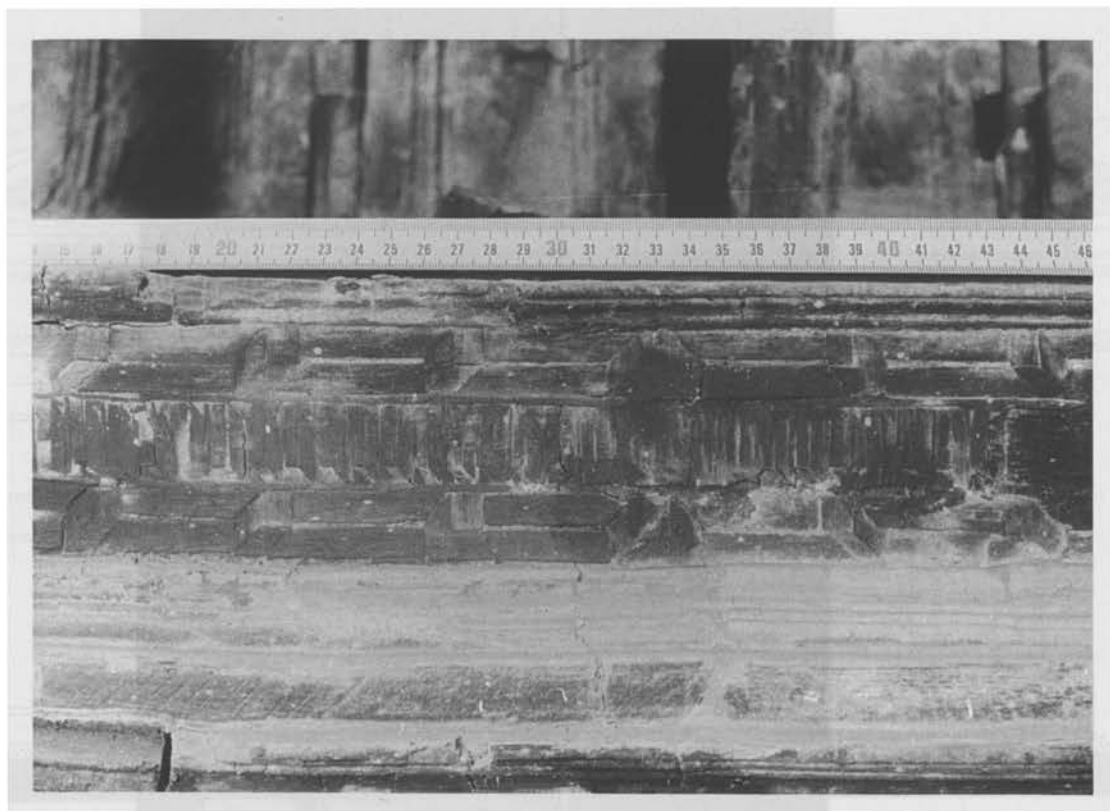
138. *Aedicula* from *Insula V 17*, Herculaneum (cat.no. 28): A. front view; B. side view (right); C. cross-section v-w (looking down; the preserved section of the upper base board is indicated below the doors; the modern base board is not shaded); D. partial cross-section x-y of entablature and pediment, at front centre; E. cross-section t-u (towards back); remaining hinge segments shown as 1; scale 1:10.



139



140



141



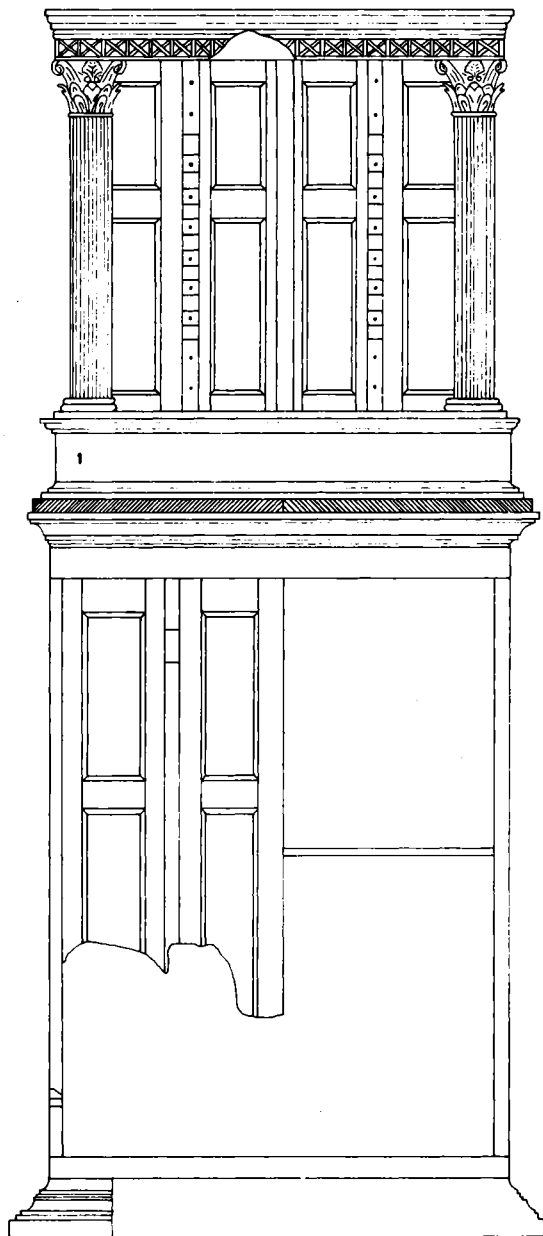
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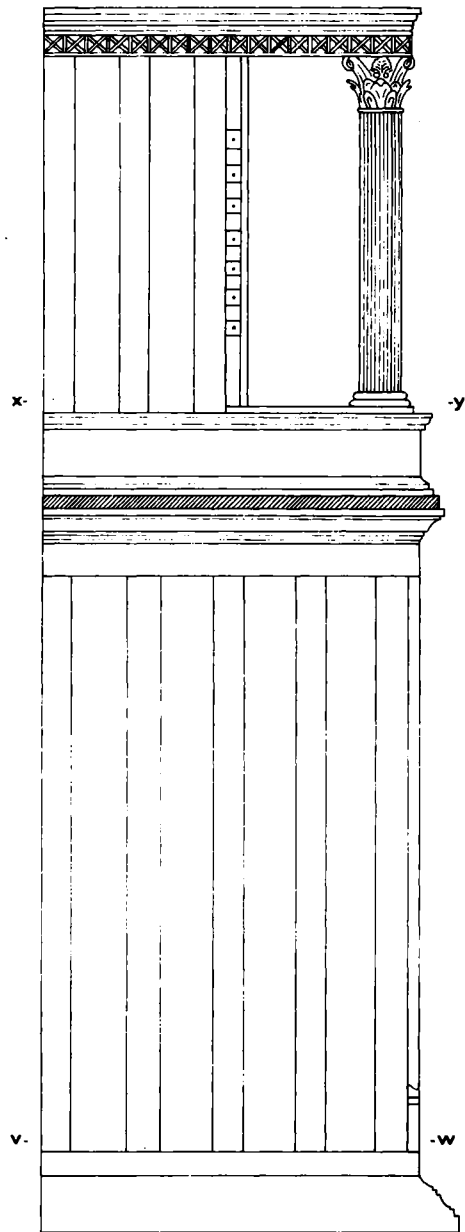
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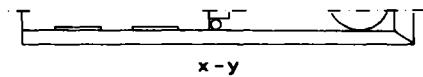
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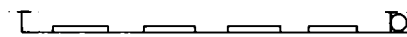
A



B



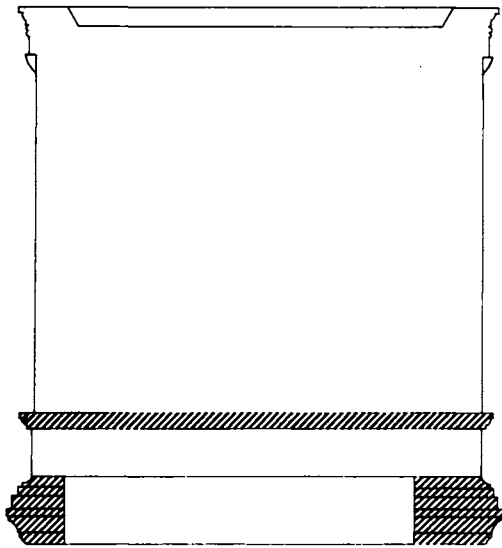
x-y



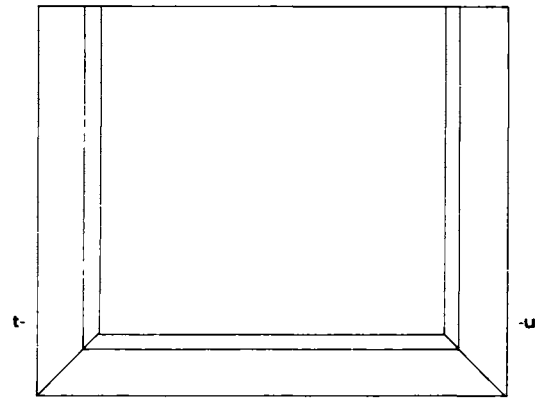
C

v-w

145. *Aedicula* from the Casa del Sacello di Legno, Herculaneum (cat.no. 29): A. front view (the only original parts of the reconstructed lower section are the fragments of doors, the bottom left-hand corner below hinge segment and the remains of the base); B. side view left (the lower section is reconstructed except for the moulding and hinge segment at bottom right); C. top view and partial cross-section x-y (above) and v-w (below); D. rear view upper section; E. top view (above) and cross-section t-u (below); F. detail base moulding and base of pillar, upper section; G. detail top left-hand corner, front upper section; H. detail base moulding, lower section; I. front view centre-right door, upper section; J. cross-section r-s; K. cross-section p-q; L. cross-section n-o; M. cross-section l-m; N. cross-section j-k; O. cross-section h-i; as indicated in J-O, the back of the door is probably identical to the front; A-E: scale 1:10; F-O: scale 1:2.

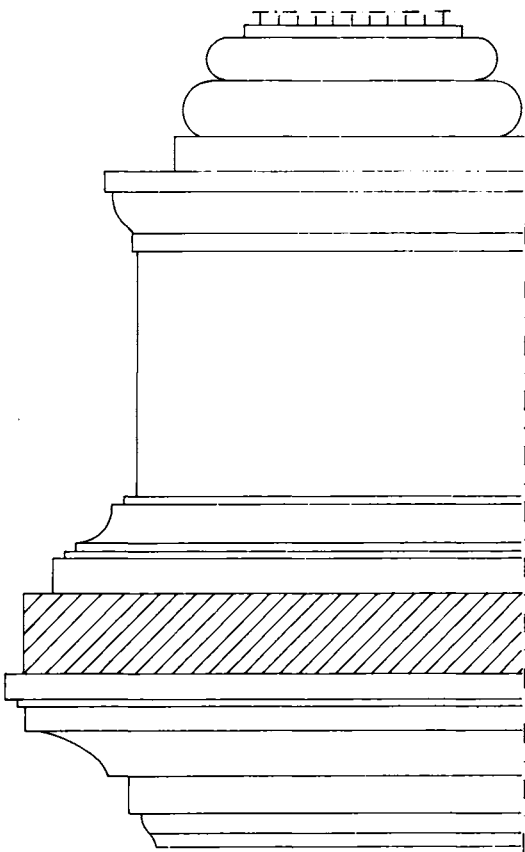
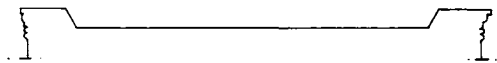


D

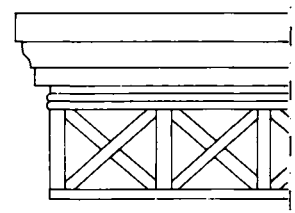


E

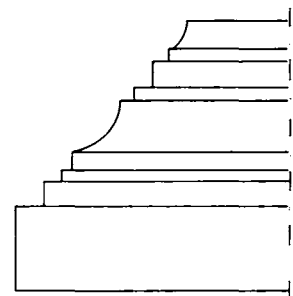
t - u



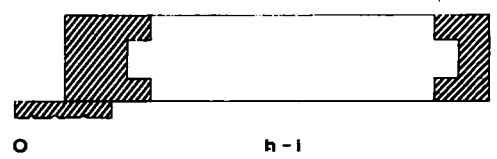
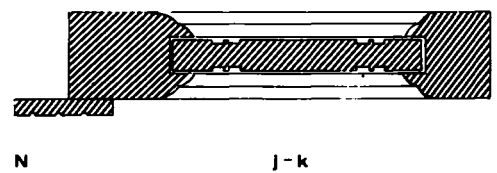
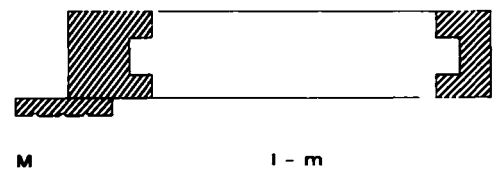
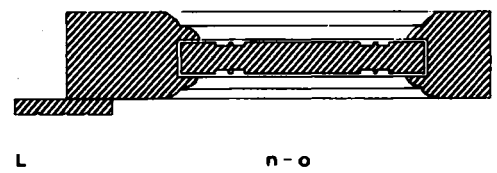
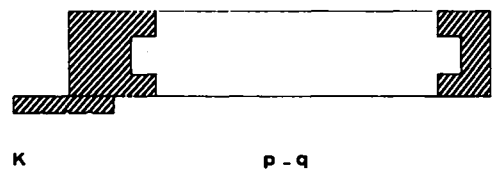
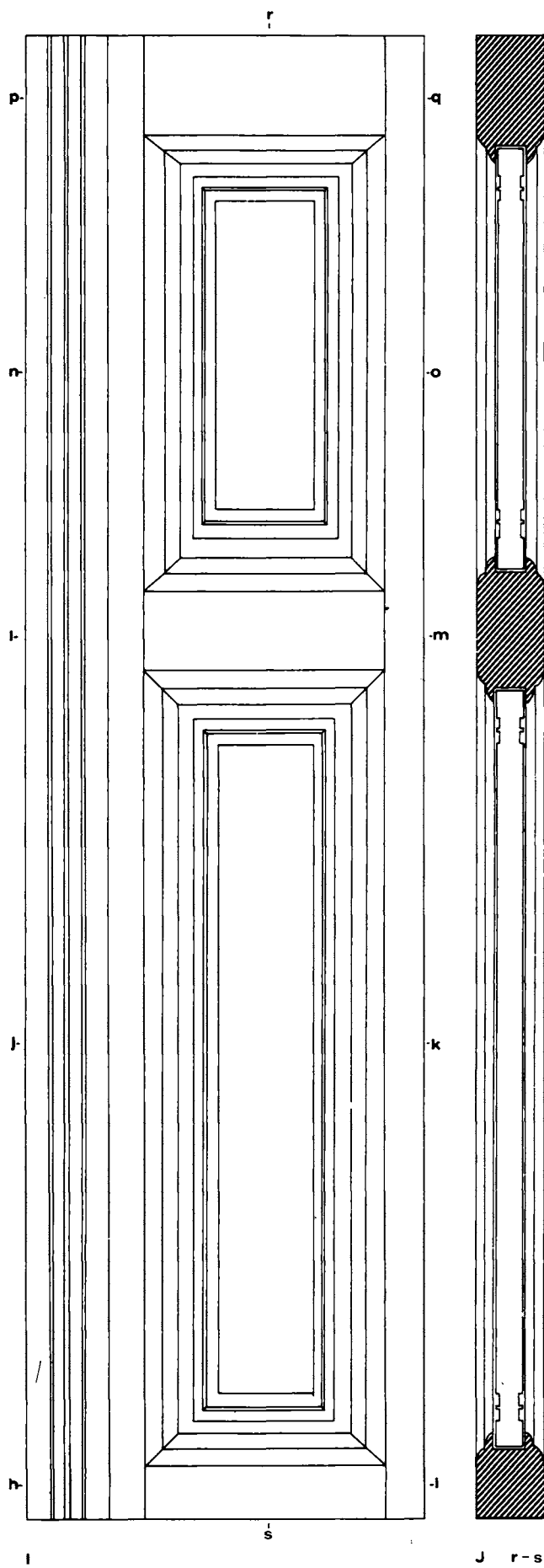
F

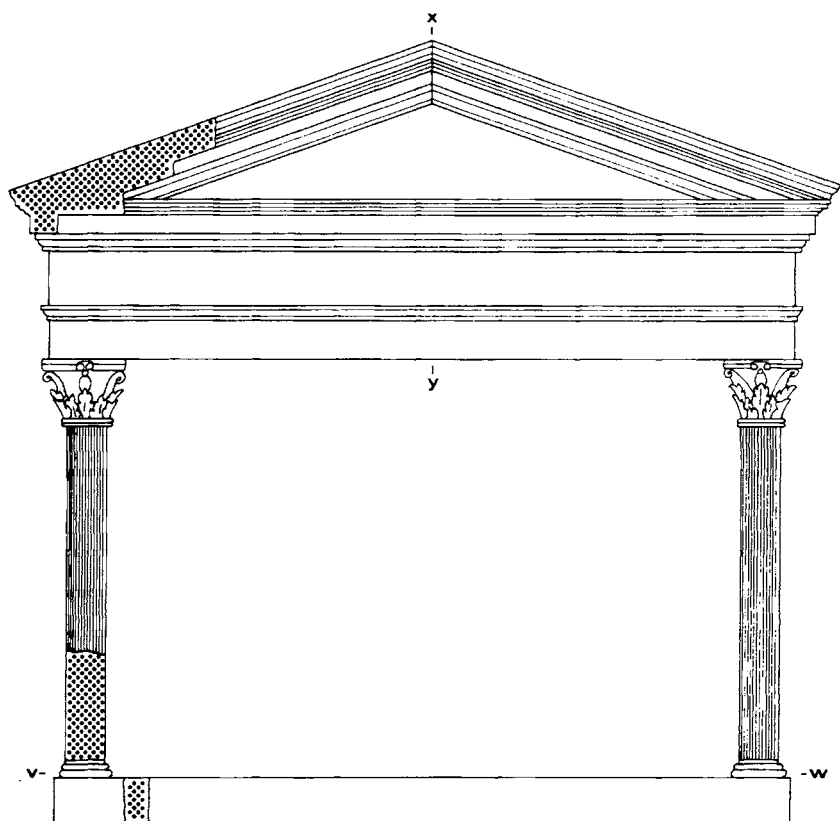


G

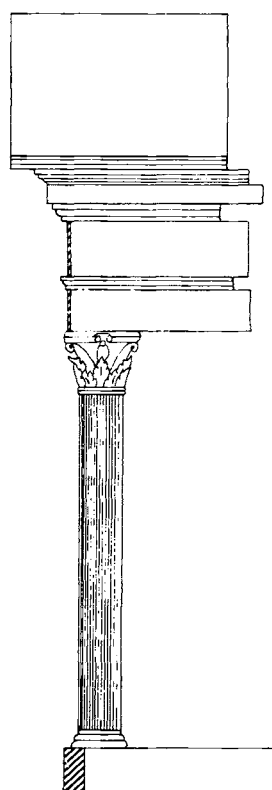


H

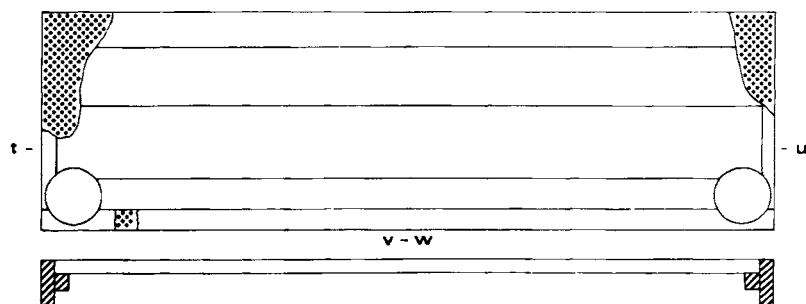




A

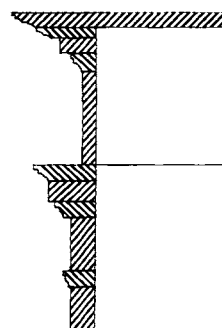


B



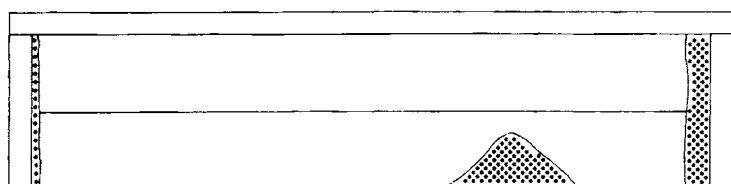
C

t - u

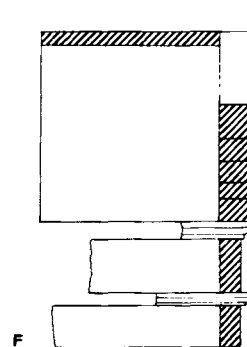


D

x - y



E

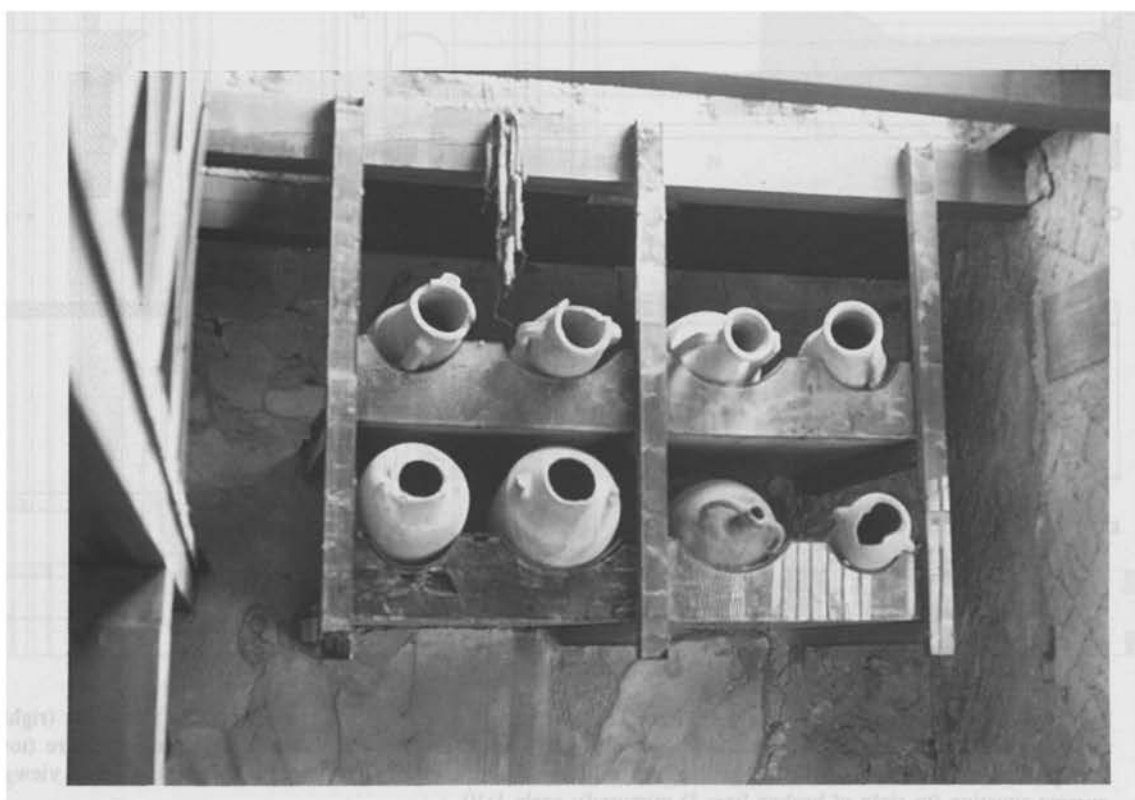


F

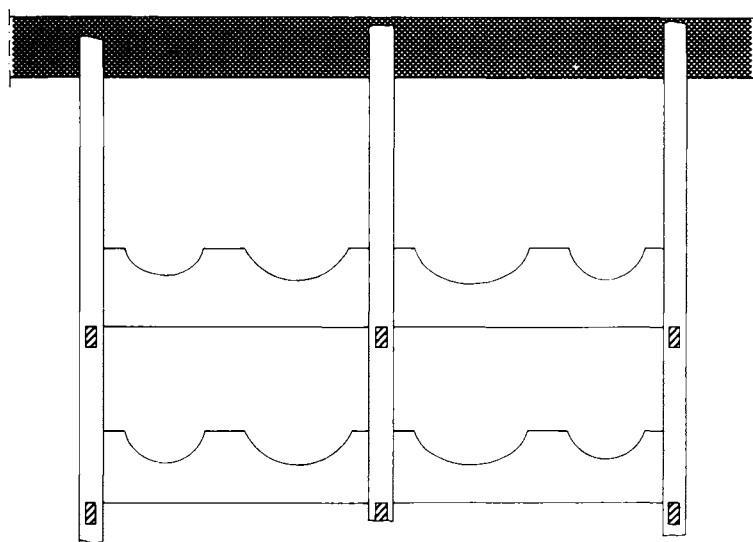
146. *Aedicula* from the Casa del Salone Nero, Herculaneum (cat.no. 30): A. front view; B. side view (right); C. cross-section v-w (looking down) and cross-section t-u; D. cross-section entablature and pediment, centre (towards left; pitched roof reconstructed); E. ceiling above pillars (from below; top = front *aedicula*); F. side view right, current situation (to right of broken line: D mirrored); scale 1:10.



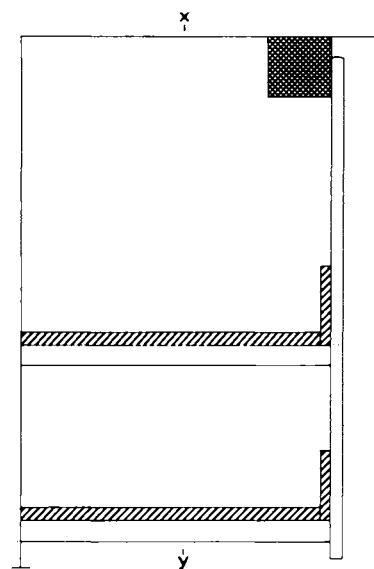
147



148



A



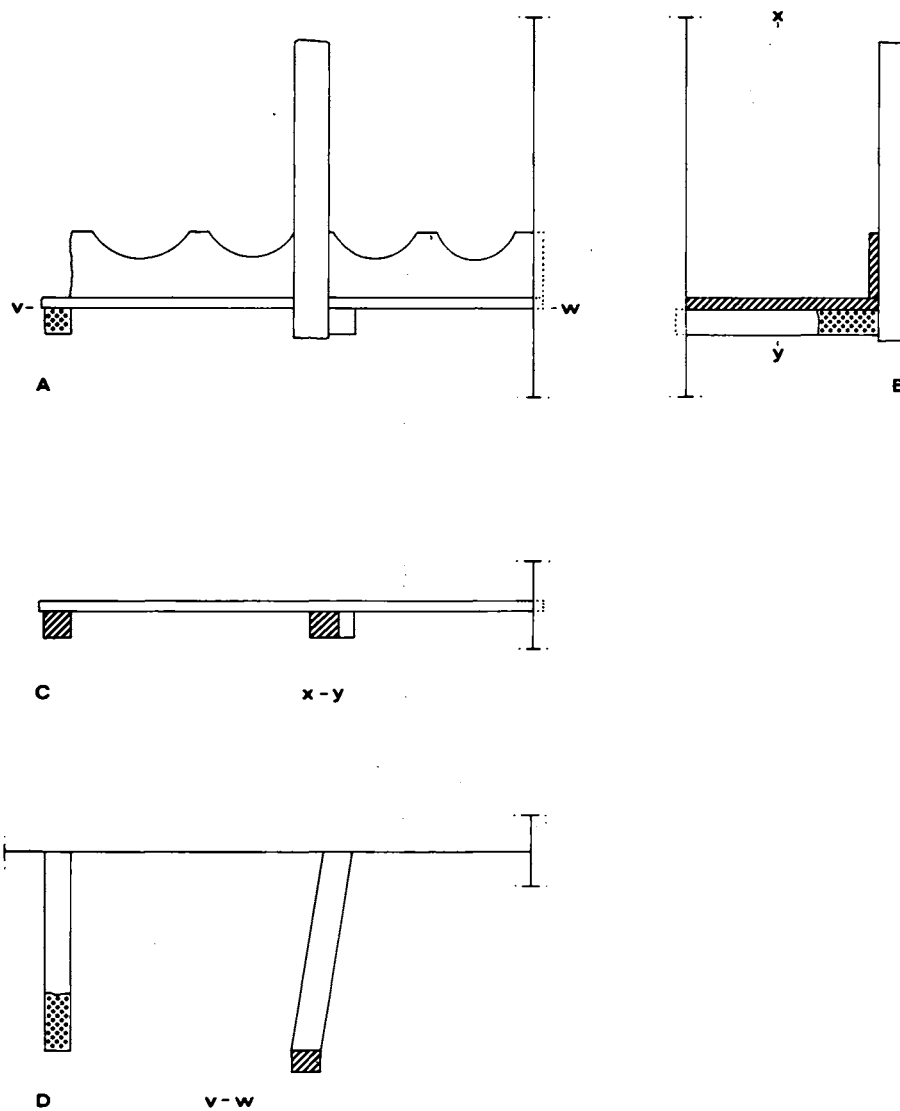
B



C

x - y

149. Amphora rack from *Insula V 6*, Herculaneum (cat.no. 31): A. front view (the crosscut ends of the tenons are shown in their original position); B. side view (left), cross-section, dotted lines indicating tailed end in wall (on left) and joint in upright (on right); C. cross-section x-y (modern joist not shown); scale 1:20.



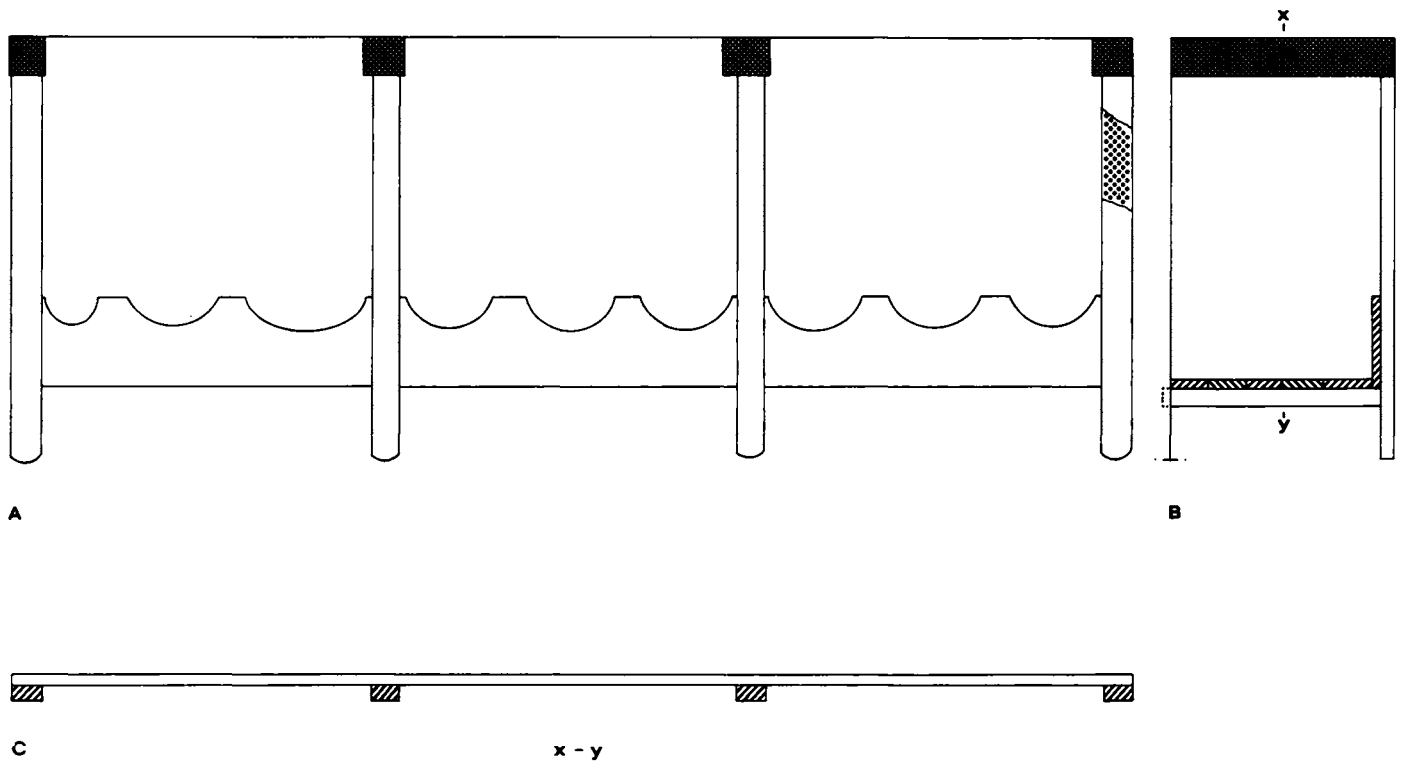
150. Amphora rack from *Insula* VI 12, Herculaneum (cat.no. 32): A. front view; B. side view (left); C. cross-section x-y (towards back); D. cross-section v-w (looking down); dotted lines in A and B indicate tailed ends in wall; scale 1:20.



151

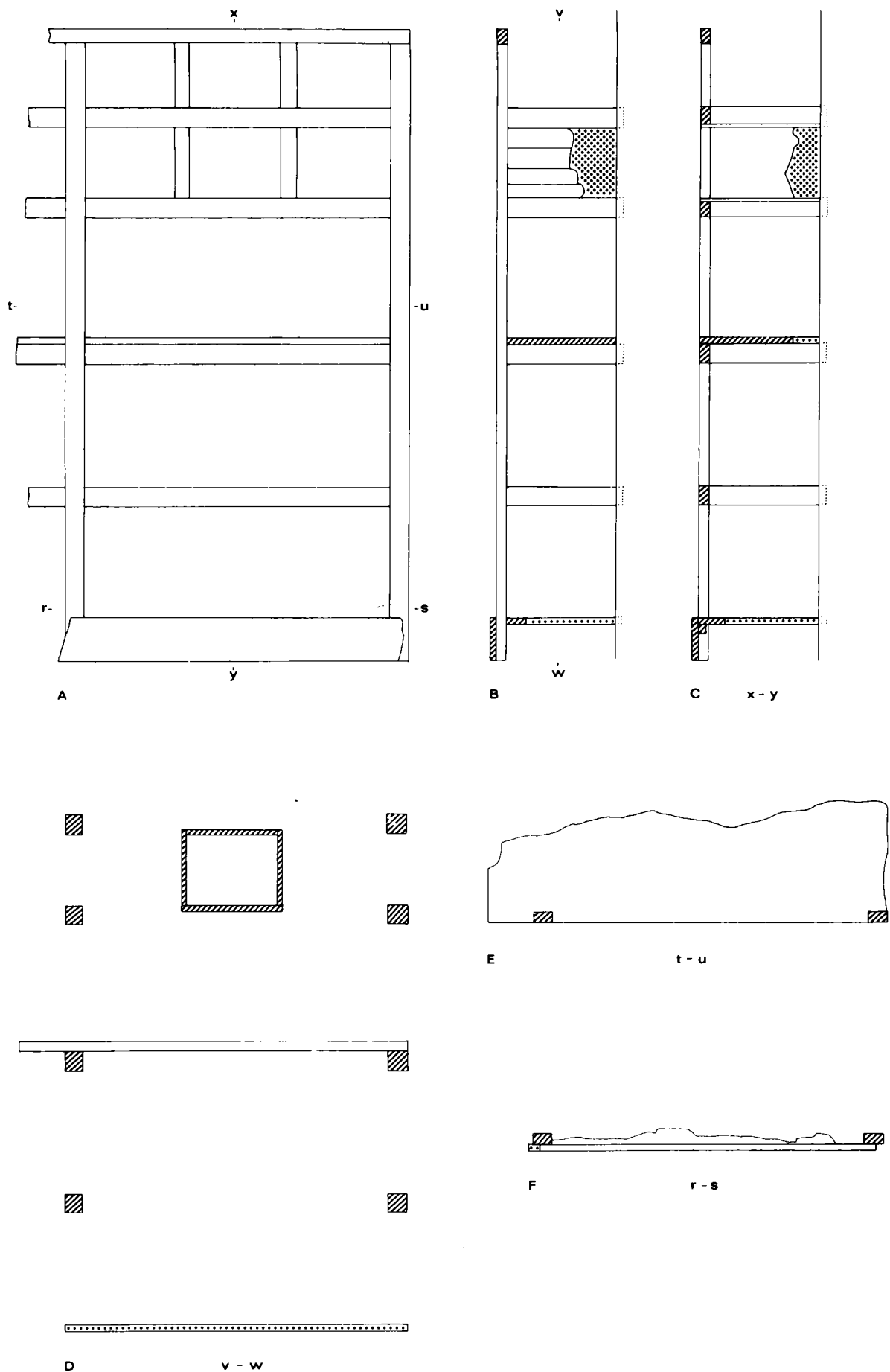


152

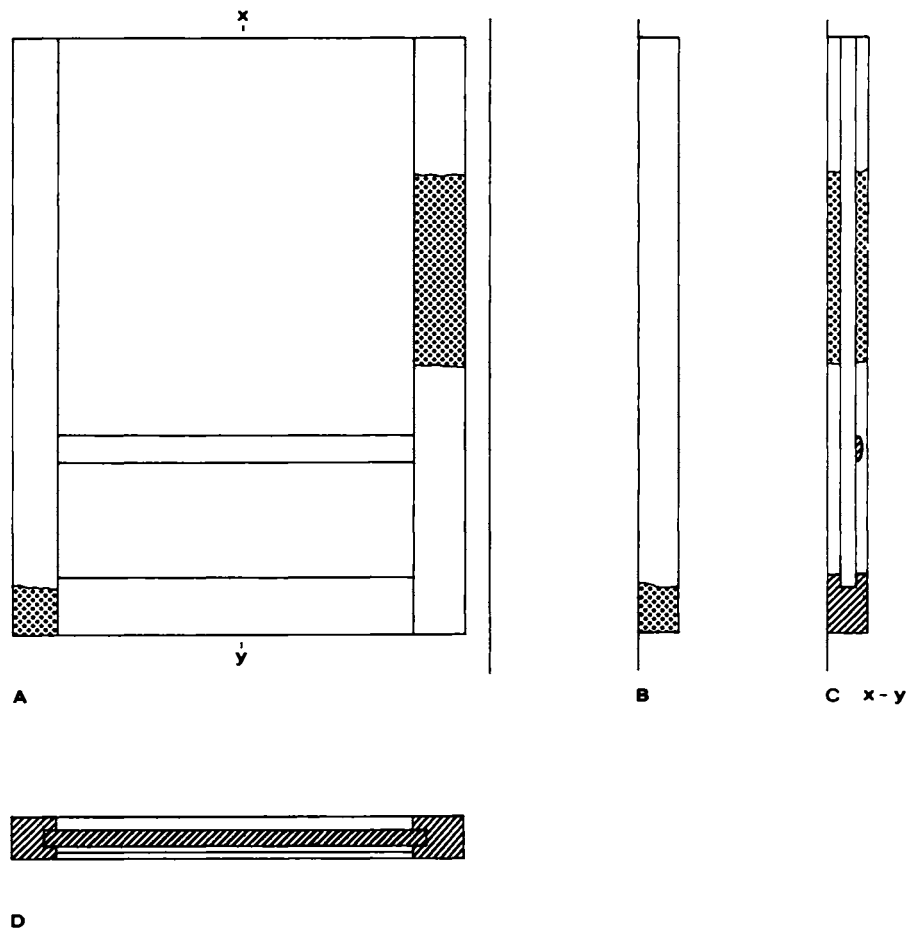


153. Amphora rack from *Insula Orientalis* II 9, Herculaneum (cat.no. 33): A. front view; B. side view (left); C. cross-section x-y (towards back); dotted lines in B indicate tailed ends in wall; scale 1:20.

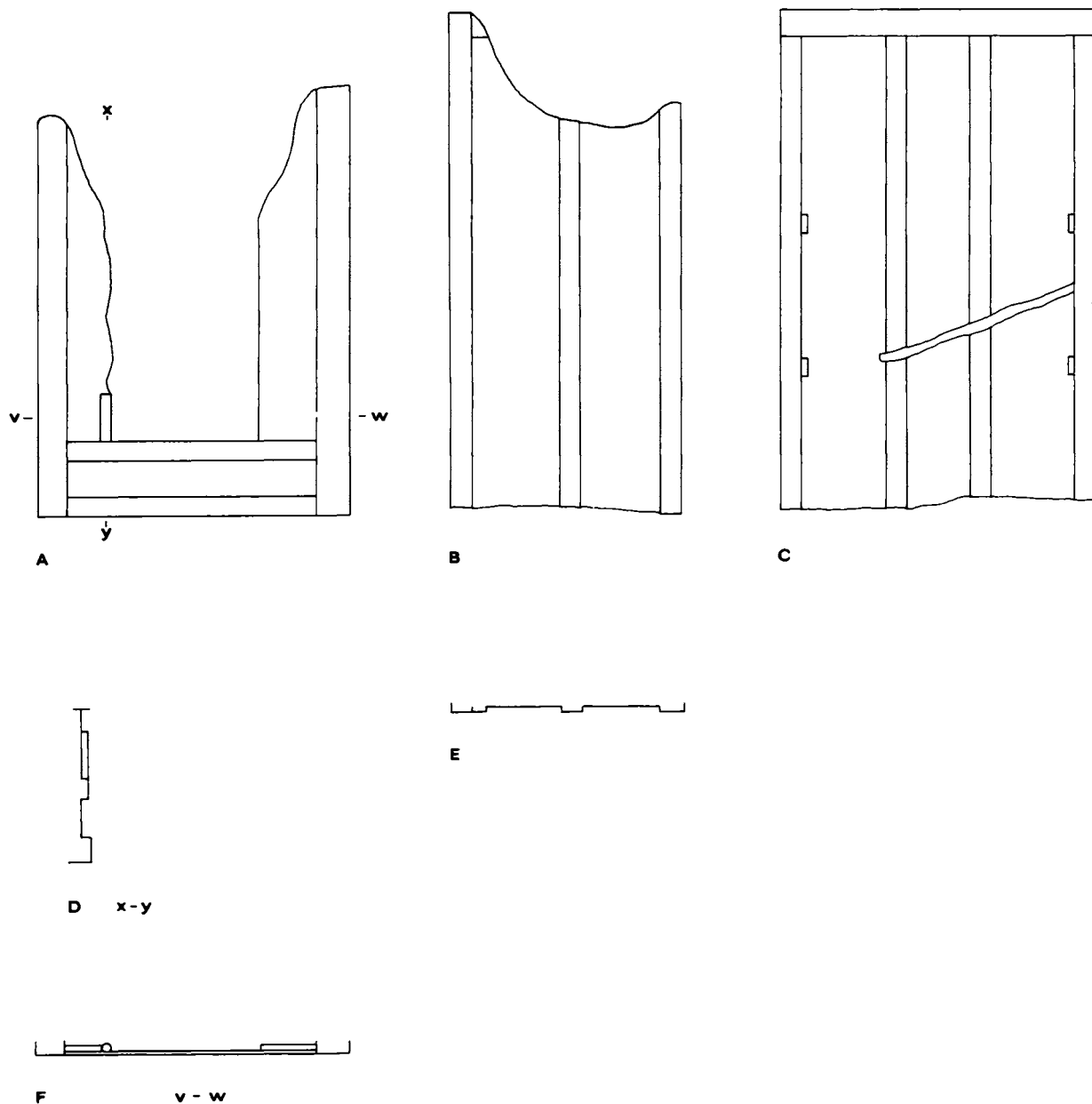




155. Rack from *Insula V 12*, Herculaneum (cat.no. 34): A. front view; B. side view (right); C. cross-section x-y (towards left); D. cross-section v-w (towards back); E. cross-section t-u (looking down, with remains of shelf); F. cross-section r-s (looking down, with remains of lower shelf); dotted lines in B/C indicate tailed ends in wall; scale 1:20.



156. Cupboard (fragment) from the Casa a Graticcio, Herculaneum (cat.no. 35): A. front view; B. side view (left); C. cross-section x-y (towards right); D. top view; scale 1:10.



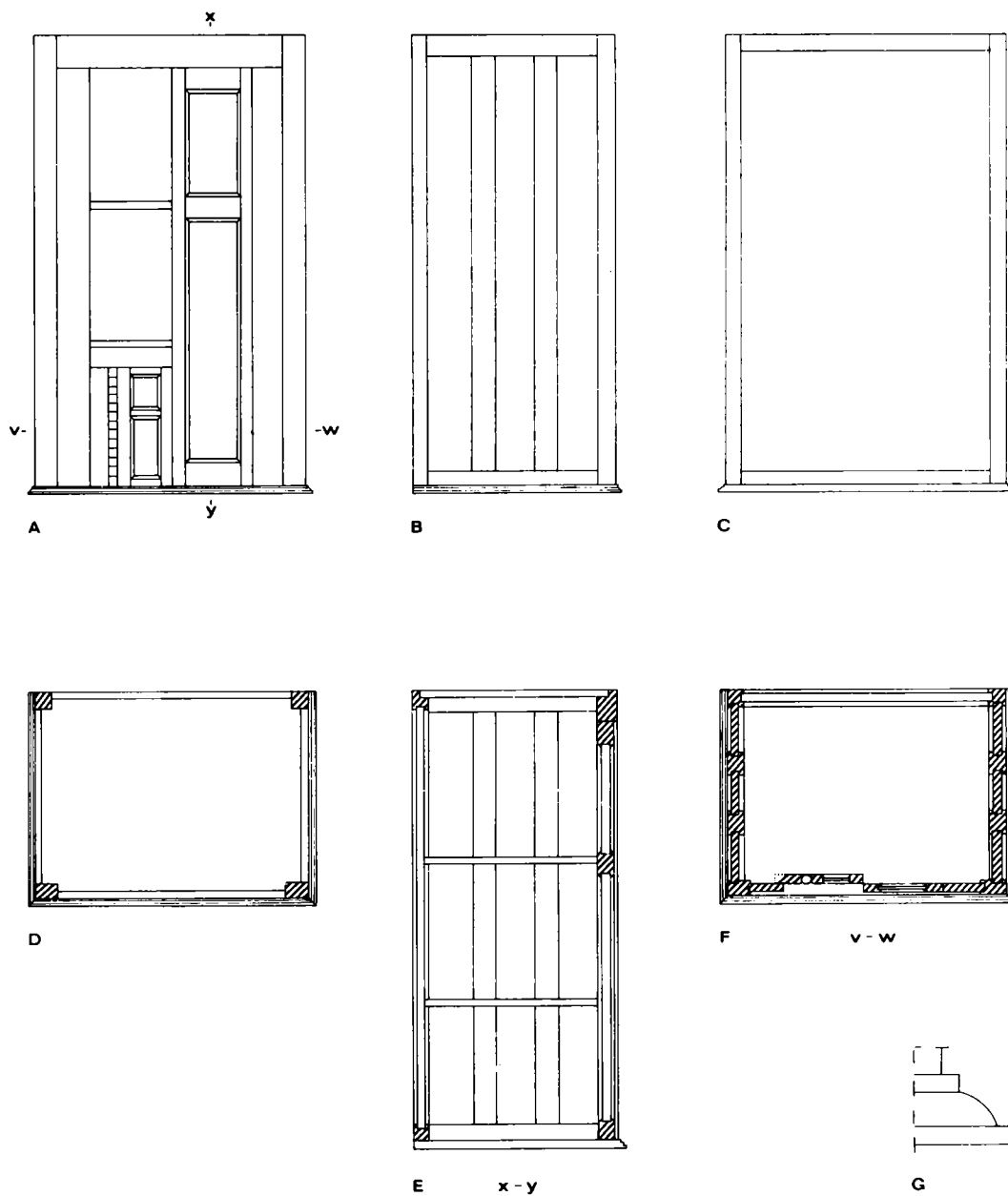
157. Cupboard from the Casa a Graticcio, Herculaneum (cat.no. 36): A. front view; B. side view (left); C. back (viewed from inside cupboard) also showing remains of shelf and shelf supports; D. cross-section x-y (front only); E. top view left-hand side (see B); F top view front (see A); scale 1:20.

158



159





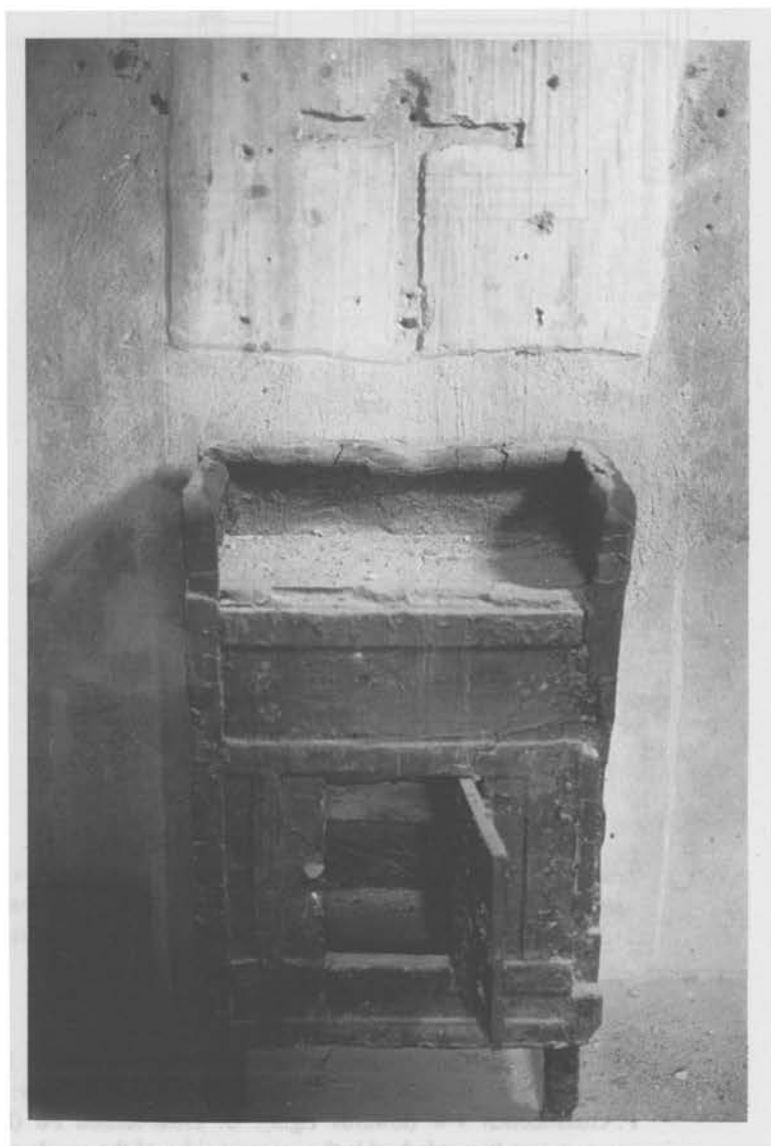
160. Cupboard from *Insula V 17*, Herculaneum (cat.no. 37): A. front view; B. side view (left); C. rear view; D. top view; E. cross-section x-y (towards right); F. cross-section v-w (looking down); G. detail base moulding; the back panel is reconstructed without internal stiles; the thickness of the small door at bottom shelf is estimated; how far the door post extends (dotted line) cannot be seen; scale 1:20.



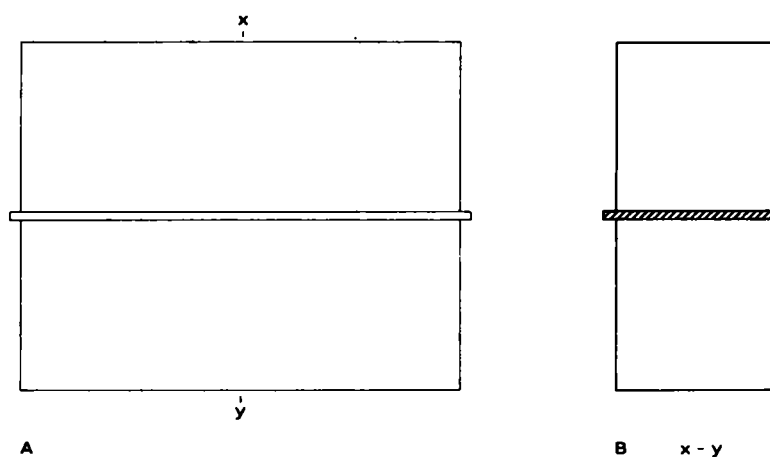
161



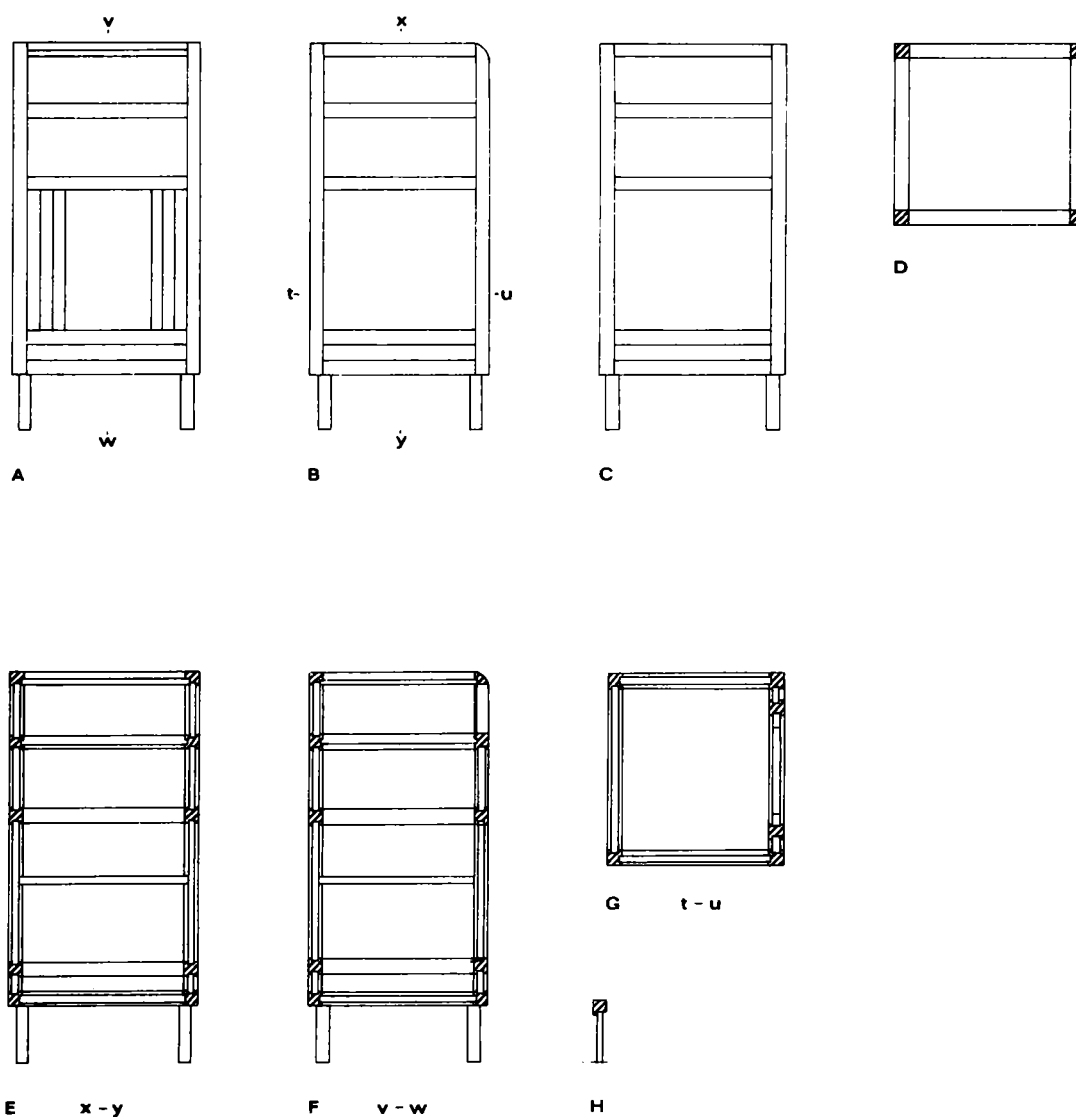
162



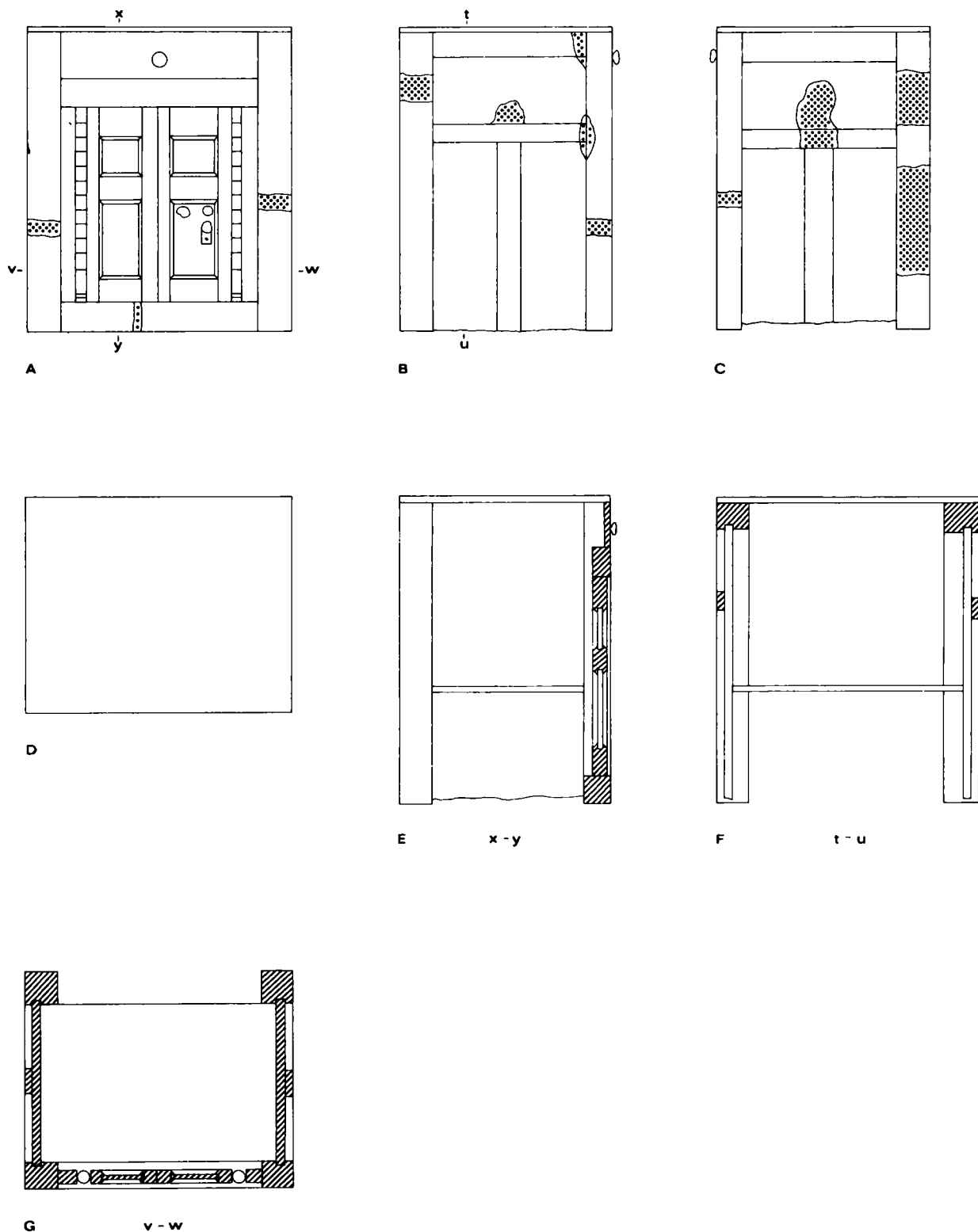
163



164. Built-in cupboard, Casa della Gemma, Herculaneum (cat.no. 38); A. front view; B. cross-section x-y (towards right; shelf reconstructed in drawing); scale 1:10.



165. Cupboard, Casa del Bicentenario, Herculaneum (cat.no. 39); sketch, the exact measurements are not available; A. front view; B. side view (left); C. presumed rear view; D. top view; E. cross-section x-y (towards back); F. cross-section v-w (towards right); G. cross-section t-u (looking down); H. cross-section side-wall of upper compartment (towards back); the crosscut sides of the panels are not shaded in E-F; scale: c 1:20.



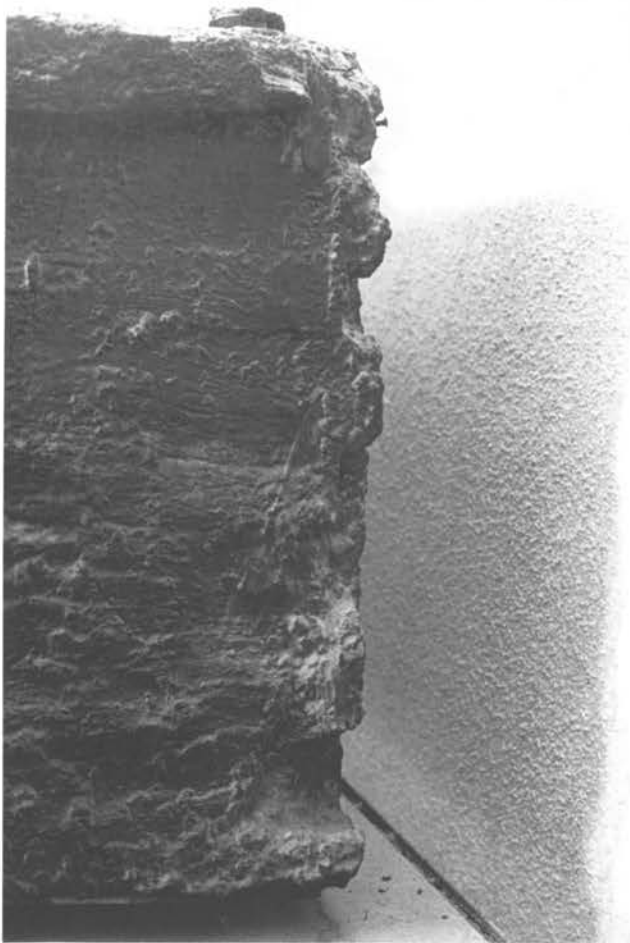
166. Cupboard, Herculaneum (cat.no. 40): A. front view; B. side view (left); C. side view (right); D. top view (crumbled edge not indicated); E. cross-section x-y (towards right); F. cross-section t-u (towards back); G. cross-section v-w (looking down); missing sections are indicated only in A-C; in D-G they are not indicated; scale 1:10.



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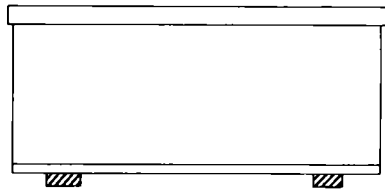
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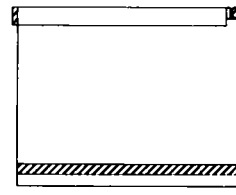
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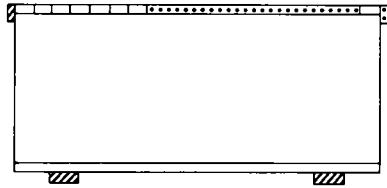
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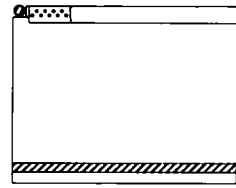
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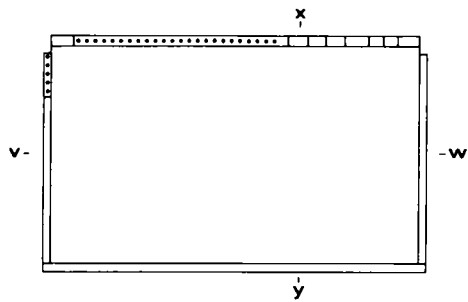
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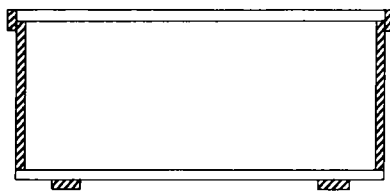
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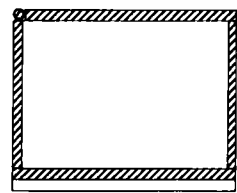


E



F

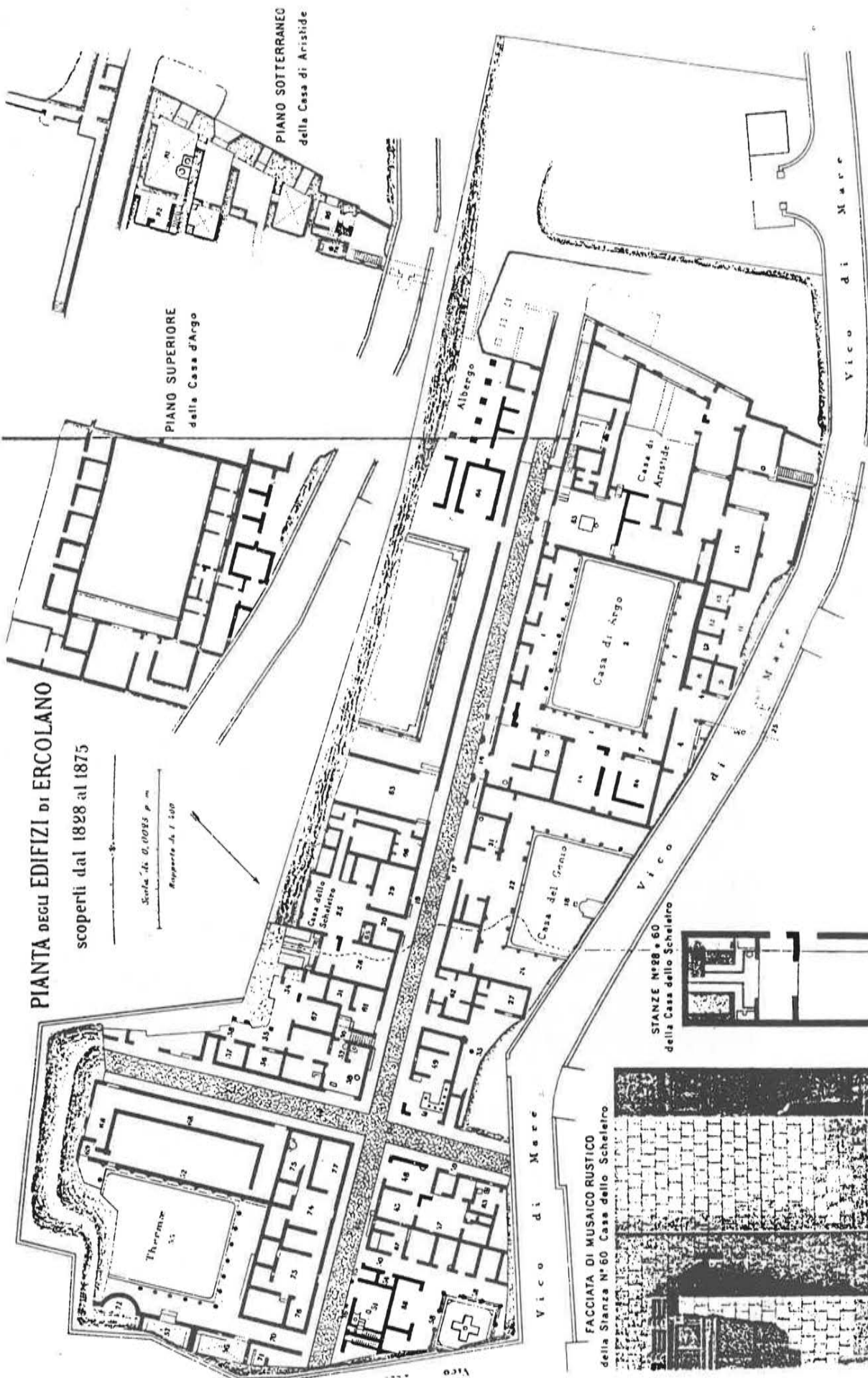
v - w



G

x - y

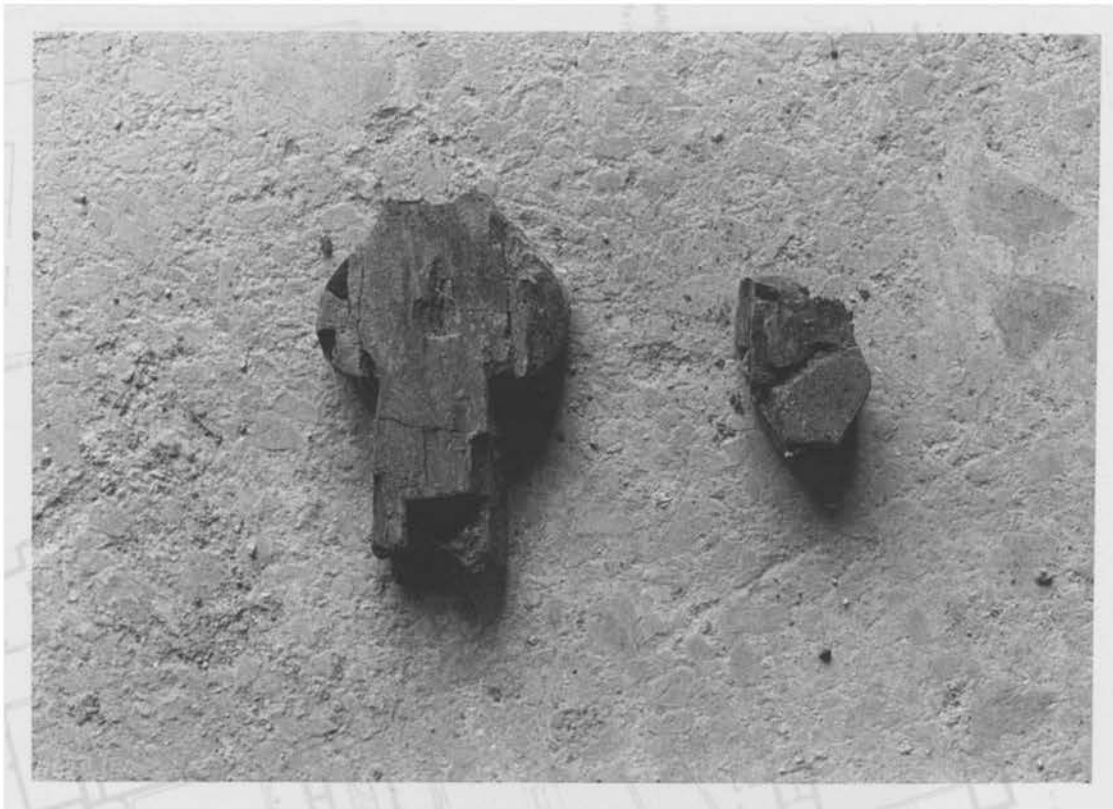
171. Chest, Herculaneum (cat.no. 41): A. front view; B. rear view; C. side view (right); D. side-view (left); E. top view; F. cross-section v-w (towards back); G. cross-section x-y (towards right); scale 1:20.



Si b. bene modo di rivestire più edifici e come rilegare degli edifici.

Scala di 1:400

Scala di 1:400



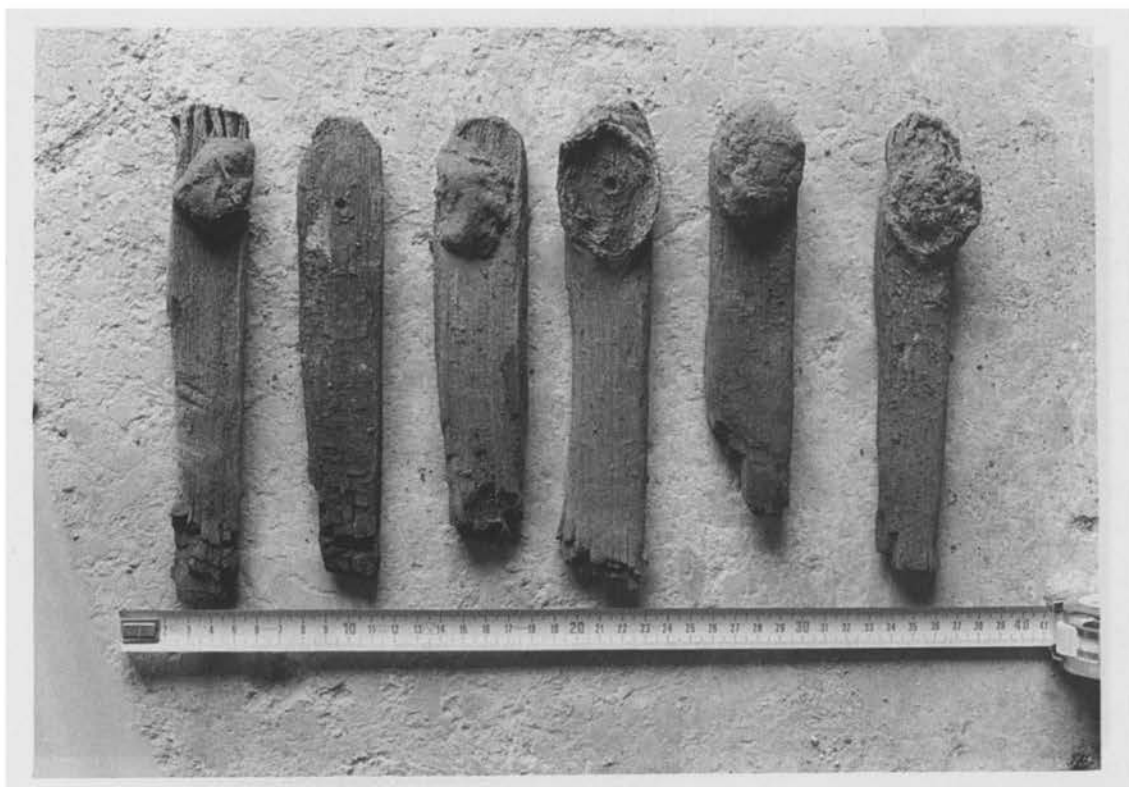
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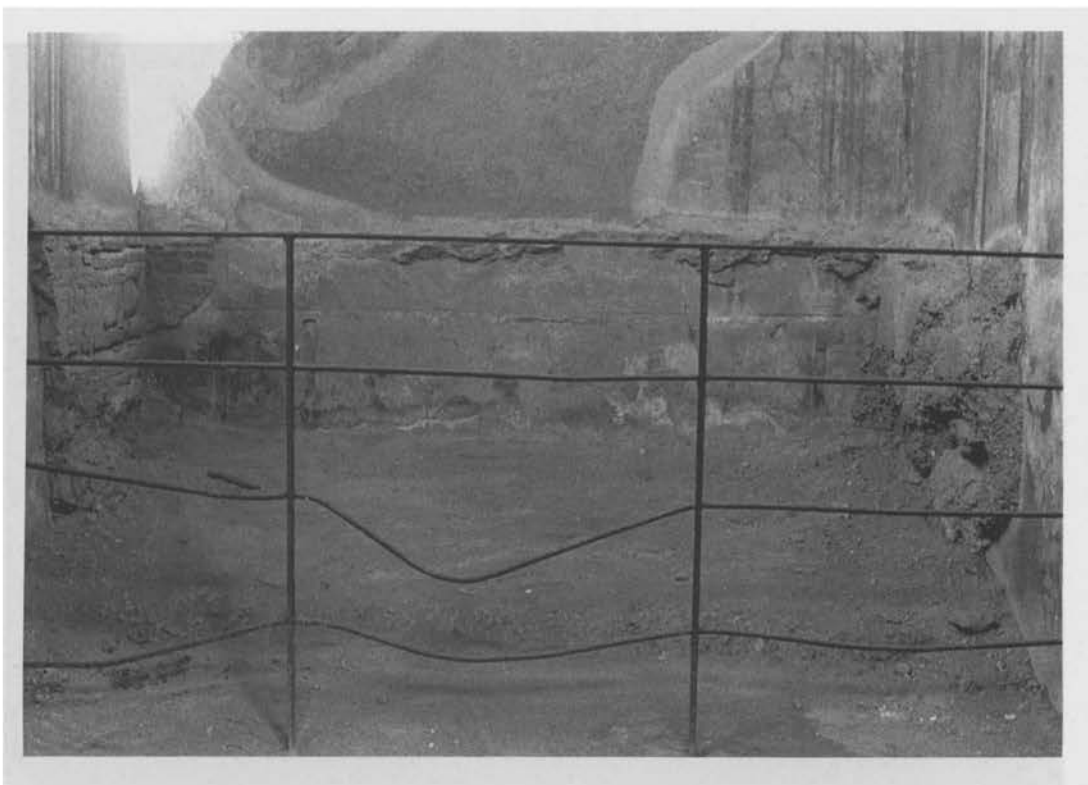
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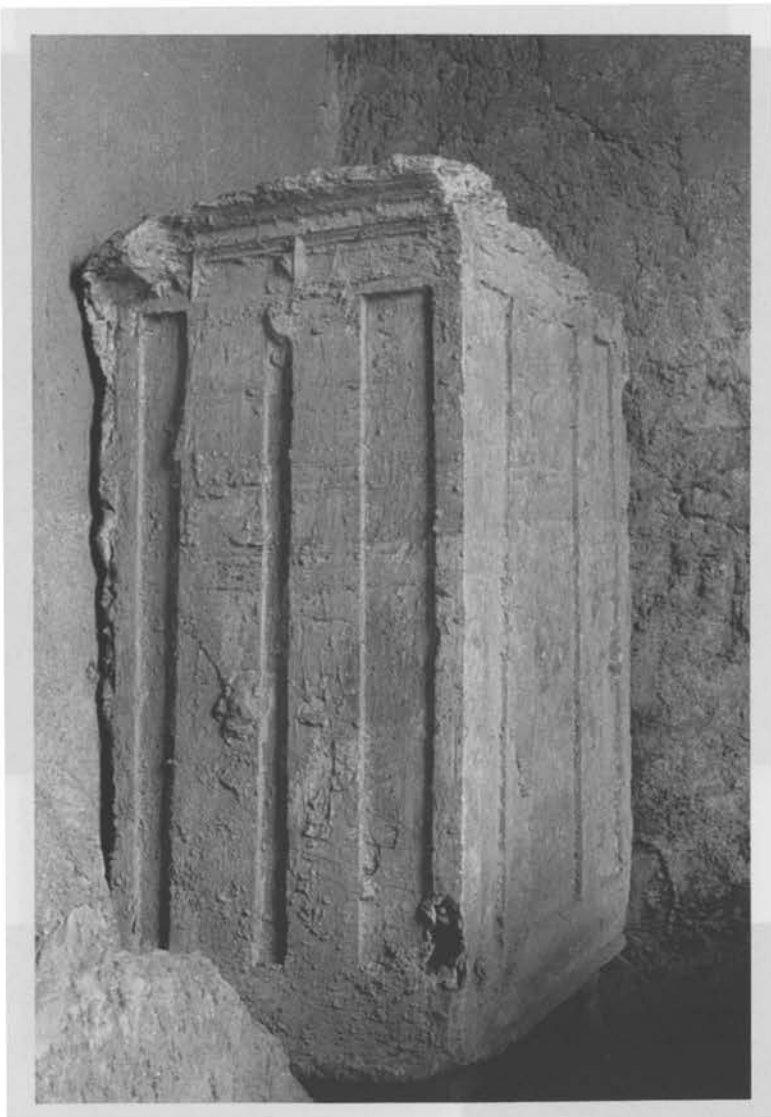
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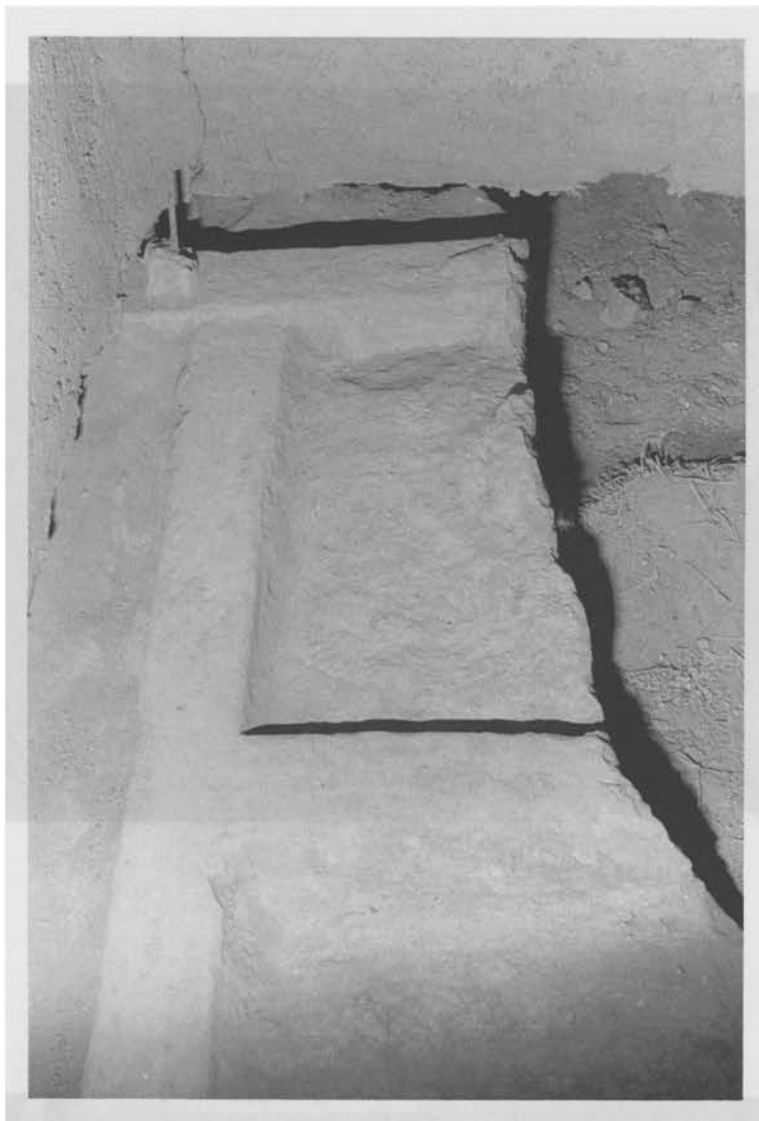
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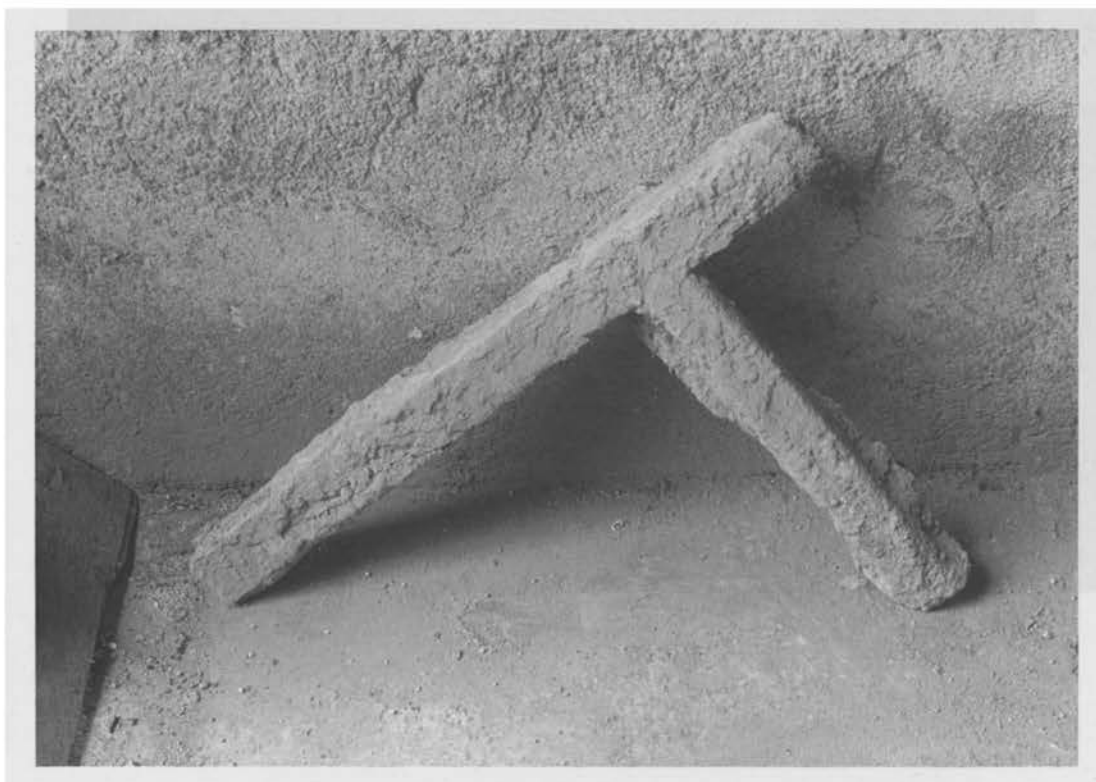
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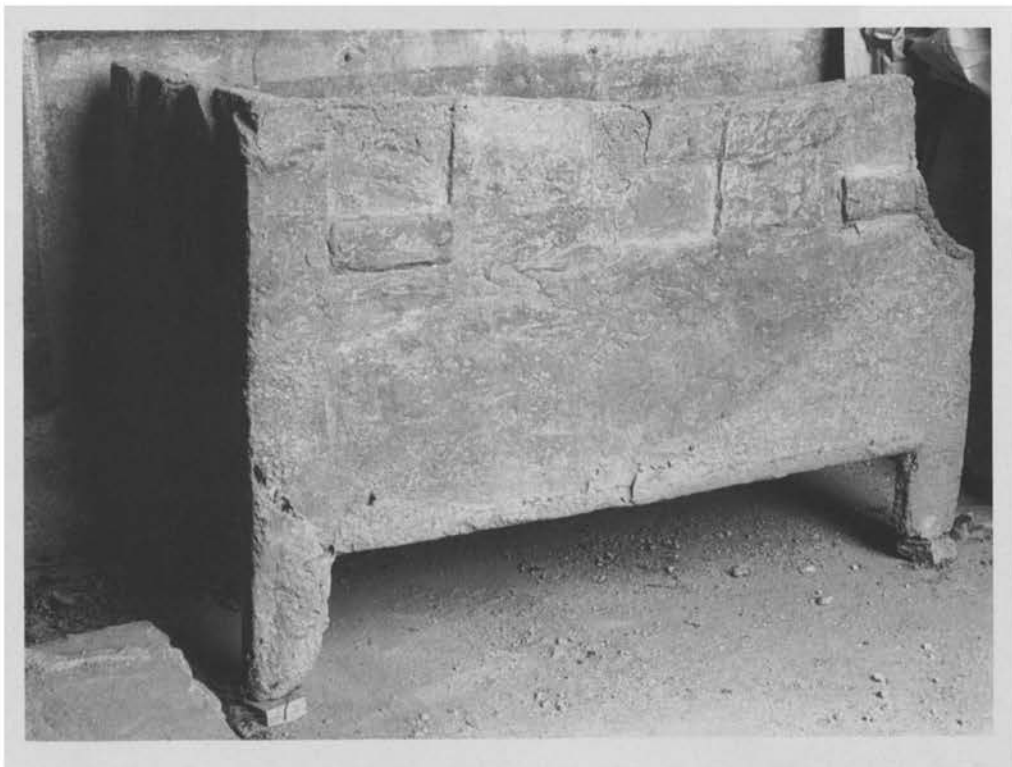
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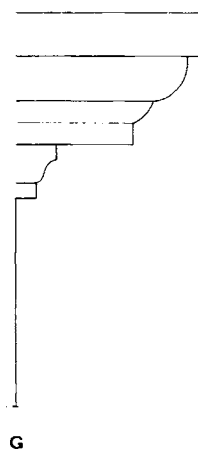
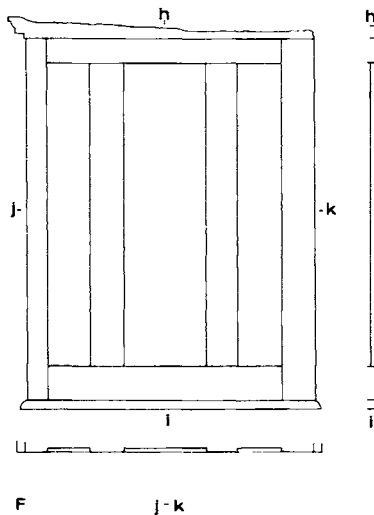
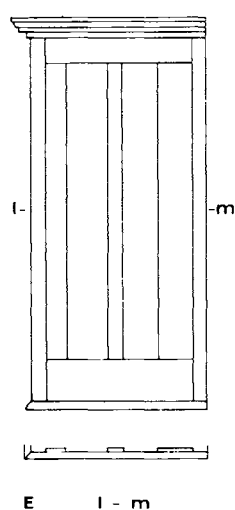
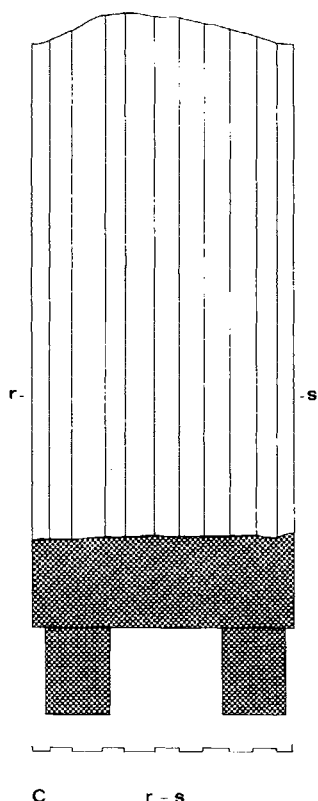
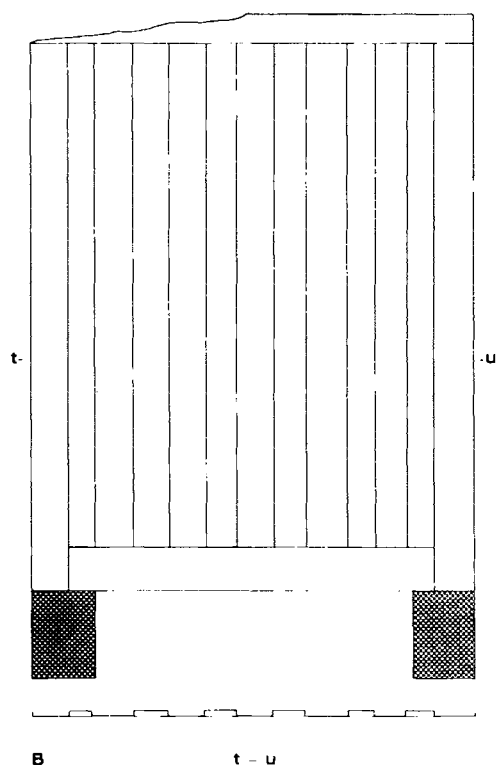
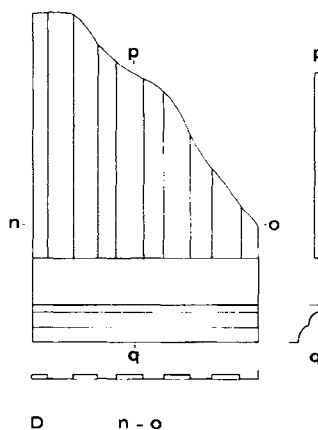
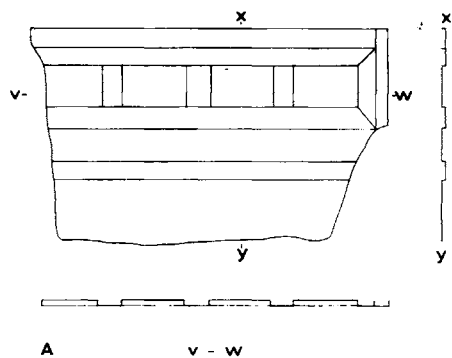
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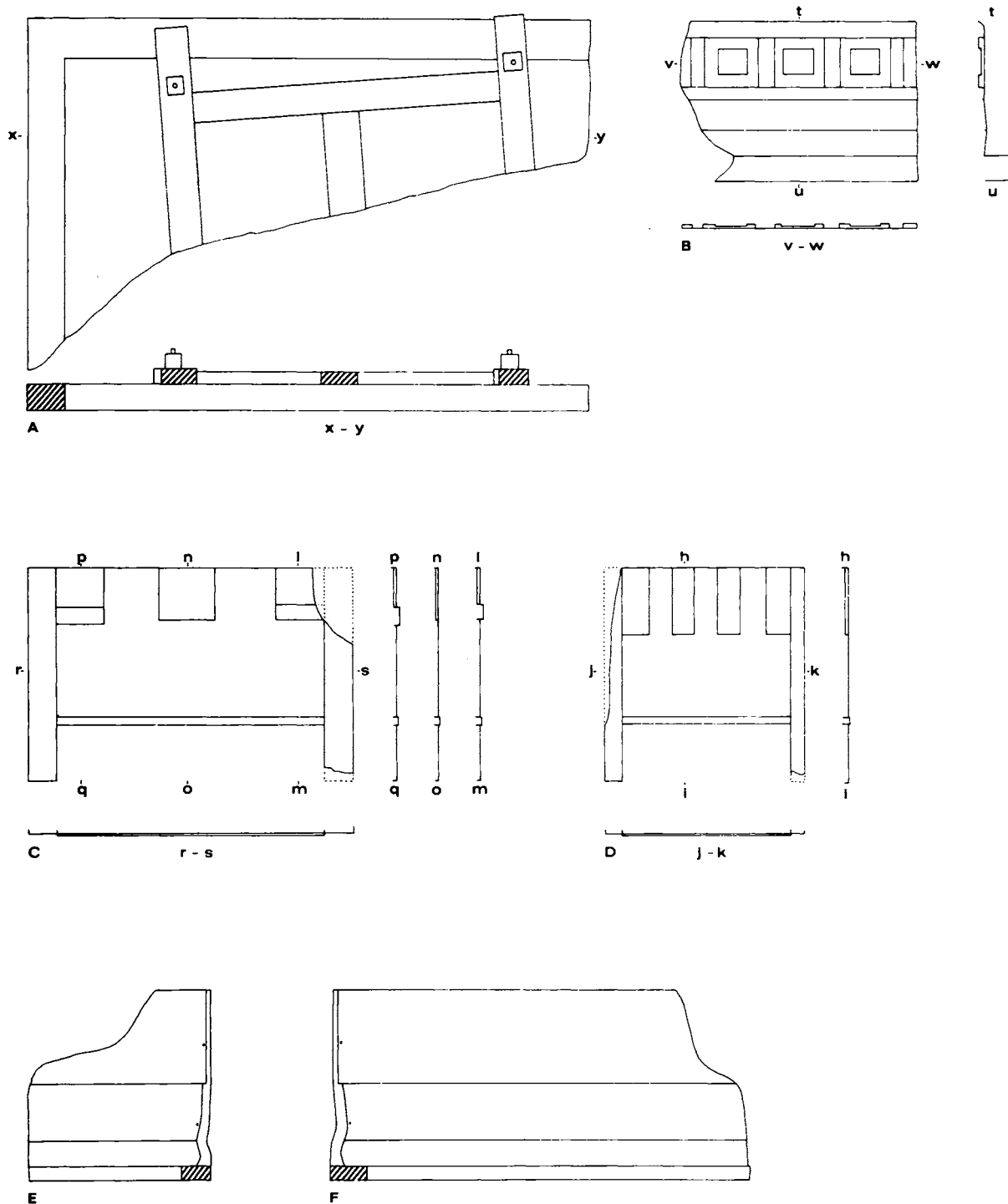


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200. Casts of furniture from Pompeii: A. Casa del Sacello Iliaco (I 6, 4), left-hand board of bed, front view (above), cross-section x-y (right) cross-section v-w (below); B. Casa dei Ceii (I, 6, 15), back of cupboard (above), cross-section t-u (below); C. Casa dei Ceii (I, 6, 15), right-hand side of cupboard (above), cross-section r-s (below); D. Casa di Fabius Amandio (I 7, 2-3), side of cupboard (above), cross-section p-q (right), cross-section n-o (below); E. Casa di Cerere (I 9, 13), right-hand side of cupboard (above), cross-section l-m (below); F. Casa di Cerere (I 9, 13), back of same cupboard (above), cross-section h-i (right), cross-section j-k (below); G. Casa di Cerere (I 9, 13), moulding along top edge E; A-F: scale 1:20; G: scale 1:2.



201. Casts of furniture from Pompeii: A. Casa di Cerere (I 9, 13), underside of bed (above), cross-section x-y (towards back) (below); B. Casa di Cerere (I 9, 13), board of bed, front view (above), cross-section t-u (right), cross-section v-w (below); C. Casa di Cerere (I 9, 13), back of cupboard (above), cross-sections p-q, n-o and l-m (right), cross-section r-s (below); D. Casa di Cerere (I 9, 13), back of cupboard (above), cross-section h-i (right), cross-section j-k (below); E. Casa di Pinarius Cerealis (III 4 b), left-hand board of bed; F. Casa di Pinarius Cerealis (III 4 b), rear board of bed; scale 1:20.